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Table of Contents

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ORIGINAL ARTICLES— PAGE.

"An Address," by F. STEELE SCOTT, M.B., B.Ch., B.A.O. .. 153

"Conditions of the Prostate, not Including the Malignant and Venereal," by A. STANLEY ROE, B.A., M.B., B.Ch., F.R.C.S. .. 155

"The Clinical Conduct of Pregnancy," by ROBERT FOWLER, M.D., F.R.C.S., F.A.C.S. .. 157

REPORTS OF CASES—

"Notes on Cases of Filariasis in North Queensland," by E. HUMPHREY, L.S.A., M.R.C.S., L.R.C.P., and RONALD D. MCINTOSH, B.A., M.B., B.S. .. 165

REVIEWS—

Therapeutics .. 169
Progress in Gynæcology and Obstetrics .. 170
Aromatics and the Soul .. 170
Handbook on Urology and Syphilis .. 170

LEADING ARTICLES—

A Health Officer for the Greater Brisbane Council 171

CURRENT COMMENT—

Vertigo .. 172
Blood Sugar and "Insulin" .. 173

ABSTRACTS FROM CURRENT MEDICAL LITERATURE— PAGE.

Medicine .. 174

BRITISH MEDICAL ASSOCIATION NEWS—

Annual Meeting .. 176
Scientific .. 178
Medico-Political .. 178
Nominations and Elections .. 179

UNIVERSITY INTELLIGENCE—

University of Melbourne .. 179

CORRESPONDENCE—

Diabetes Mellitus and Raw Pancreas .. 180
The Organic Factor in Mental Disease .. 180
Myxœdema .. 181
A Correction .. 181

PROCEEDINGS OF THE AUSTRALIAN MEDICAL BOARDS—

Queensland .. 182

BOOKS RECEIVED .. 182
MEDICAL APPOINTMENTS .. 182
MEDICAL APPOINTMENTS VACANT, ETC. .. 182
MEDICAL APPOINTMENTS: IMPORTANT NOTICE 182
DIARY FOR THE MONTH .. 182
EDITORIAL NOTICES .. 182

An Address.[1]

By F. STEELE SCOTT, M.B., B.Ch., B.A.O. (Ireland),
Retiring President of the South Australian Branch of the British Medical Association.

IT is with considerable diffidence that I address you this afternoon and I feel I have nothing new to bring before you.

The importance of the subject not only to medical men, but to the community at large and the brevity with which it is treated, are the redeeming features. The infectivity of a good number of diseases has been recognized for many centuries, long before correct records were kept or an accurate description of the malady reported.

Incidents are recorded in the Bible, especially in the Old Testament, showing that epidemics occurred which caused great havoc among the community, as for instance in 1491 B.C. the Egyptians were subjected to an epidemic of boils and blains. In the time of King David in the year 1117 B.C. a pestilence occurred by which seventy thousand persons perished. Four hundred years later is recorded the dramatic annihilation of Sennacherib's host when one hundred and eighty-five thousand men were said to have perished in one night. Coming to later dates, in the thirteenth and fourteenth centuries A.D. we have records of a virulent deadly and highly infectious disease starting in Asiatic countries and passing with comparative rapidity westward, following first along the seaport towns which ships from affected ports visited.

This epidemic was evidently similar to the bubonic plague of our own time and even at that early date it was recognized that traders whether travelling by caravan or by sea were the cause of the spread of this fatal disease. The mortality was stupendous, some cities losing as many as 75% of their inhabitants.

In the seventeenth century occurred the Great Plague of the City of London, which not only caused the death of thousands upon thousands of the inhabitants, but paralysed business for the time. So difficult was the disease to cope with that the devastating fire of the following year was regarded as the greatest factor in eliminating the pestilence which was still lurking in many of the poor parts of the city.

Everyday contact with disease may be apt to cause a certain contempt or apathy and it is only on

[1] Delivered at the annual meeting of the South Australian Branch of the British Medical Associtaion on June 26, 1925.

reflection that we realize the ravages. Such is apt to be the case with pulmonary tuberculosis. Any infectious disease arriving with a flare of trumpets, prostrating numerous members of the community in a short space of time, is likely to receive more attention than an infectious disease working slowly but surely, taking its toll of death day in day out, spreading its infection in such an insidious manner that results may not be realized for months or years afterwards.

It is sixty years since Villemin proved by inoculation experiments on rabbits and guinea pigs the infectivity of tuberculous matter. Forty-four years ago Koch discovered the tubercle bacillus, the organism which causes all forms of tuberculosis.

Since then we have known the cause of pulmonary tuberculosis, that it is infectious, and the means by which infection is spread.

Armed with this knowledge has our treatment of the disease and our efforts to prevent its spread been all we could desire during these years? I am afraid not.

When we look at the mortality caused by pulmonary tuberculosis among our fellow creatures during the best time of their lives, the time when they are of most value to the State, it makes one shudder.

Also it is a slow disease which causes a long period of morbidity during which time the sufferer is unable to be a wage earner and is dependent for livelihood on means other than those obtained by own personal exertions. In South Australia during twenty years, 17,990 people have died from disease between the ages of fifteen and fifty years and of that number 4,886 have been victims of pulmonary tuberculosis, which means of all deaths from disease between those ages over 27% are due to pulmonary tuberculosis alone. Take into consideration the term of ill-health which this lingering malady entails, we shall realize the loss caused to the community by this one fell scourge.

At present pulmonary tuberculosis is a notifiable disease, but outside notification, the issuing of printed instructions, occasional visits from the nurse inspector and disinfection when the patient dies or changes his residence, there is little else done. There is no control over the infected patient who is at liberty to follow his avocation, whether it is in a crowded factory or in the open air, to attend church or places of amusement, to visit his club, to travel by train or steamer, in fact he can move about like any other citizen.

I will not dwell on the adequacy or otherwise of institutions for the reception of tuberculous patients either in the form of sanatoria or homes for incurables in South Australia.

All medical practitioners have many times thought how this disease could be stamped out and no doubt all have formed the same opinion, but the apparently drastic nature of the treatment has prevented most from mentioning it above their breath. I mean segregation.

Segregation may seem a cruel procedure, but our forefathers were bold enough and wise enough to adopt it. It was the means of stamping out leprosy which was common in England in the thirteenth and fourteenth centuries. Certainly the methods adopted were to our ideas cruel in the extreme. Patients were first taken into the church, had the funeral service read over them and were then banished to a hut on the moor and were dependent for their sustenance on charitable people.

The question might be asked is segregation feasible? In my opinion it is. At present it would be a huge undertaking on account of the numbers and expense, but in twenty-five years there would not be half the number, while in fifty years I venture to prophesy there would be many empty segregation colonies, as you could not find patients to populate them.

What is wanted is a government strong enough to grapple with this matter and it certainly should be no party question; the government which does grapple successfully with this problem, will assuredly immortalize itself and confer an inestimable boon on its country and on the whole world by its example.

As regards expense I can only say "that many countries have incurred or increased their national debt for a much less laudable purpose." In times of acute national crisis the authorities are quite alive to the value of segregation. During the late war when man power was such a valuable asset, segregation in all doubtful cases was most rigorously enforced.

Failing segregation the only other solution (awaiting the discovery of a specific remedy) is the education of the public and of the patient especially towards the idea of voluntary segregation.

Examples can be cited of individuals in calm deliberation giving their lives for others (for example Lieutenant Oates during the South Pole expedition walking into a blizzard and getting lost in order that his comrades might continue their journey untrammelled; or again the wife of a citizen of Australia suffering from an infectious and loathsome disease, being segregated on an island). But it is too much to expect the rank and file of tuberculous patients to take such an altruistic view of life.

There is no country in the world so suitably situated to make an immediate success of segregation as Australia. We have in the majority of cases our well planned cities and towns, our open spaces and separation by sea from any other source of infection, so that having grappled with the problem in our own country by proper immigration inspection, we should be able to prevent the entrance of infected people.

In conclusion I think it would be a good thing if medical practitioners would in their own mind try to visualize what effect segregation properly carried out would have on pulmonary tuberculosis in fifty years' time and keep this picture before them.

CONDITIONS OF THE PROSTATE, NOT INCLUDING THE MALIGNANT AND VENEREAL.[1]

By A. Stanley Roe, B.A. M.B., B.Ch. (Oxon.), F.R.C.S. (Edin.).

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All patients that I have seen during the past five years suffering from conditions of the prostate have had at least one symptom in common, namely some frequency of urination. This is generally more noticeable at night than in the day time. The exception to this rule is one patient who complained of bowel obstruction and hæmorrhoids and in whom the enlargement of the prostate was caused by adenoma of the posterior lobe alone. Other common symptoms are difficulty in urination, dribbling, pain, tenesmus, hæmaturia, sexual symptoms and so forth, but they vary very much in different cases. In order to make an exact diagnosis in an adult male presenting himself with this symptom, it is essential to examine with the cystoscope not only his bladder, but also the posterior portion of his urethra. To understand the finer points of prostatic diagnosis, the development of the prostate must be known. It arises in intrauterine life from five projections into the urethra—an anterior, two lateral, two posterior (below and above the line of the ejaculatory ducts)—thus five lobes are formed. The anterior practically always disappears in adult life, the two laterals form the lateral lobes and coalesce with the upper posterior or "middle" lobe. The posterior projection forms the posterior lobe and is separated by a tough septum from the rest of the prostate. Thus an adenomatous hypertrophy may clinically at least be solely in the posterior lobe, such as occurred in my one patient who had no urinary symptoms. Also any enlargement of the middle lobe must be accompanied by some involvement of the lateral lobes or *vice versa*. Another group of glands shows up in the intrauterine life just below the internal sphincter, namely, those of Albarran. These in later life invariably show some enlargement, even if only microscopical. They are capable, however, of forming almost any size of tumour and when large enough press upwards through the sphincter to form an intravesical projection—another type of middle lobe enlargement. Lower in the posterior portion of the urethra is the *verumontanum* with the ejaculatory ducts, abnormal conditions of which are now being claimed as being produced by certain sexual irregularities, and which are supposed to be associated almost invariably with the symptoms of frequency, tenesmus and dribbling. Other pathological conditions than those in the prostate which may be strikingly associated with the same symptom of frequency, are in my experience: (i.) Renal and ureteral conditions, calculus and inflammation; (ii.) bladder conditions, papillomata, diverticula, calculi, especially when they are all causing infection. These conditions must all be investigated mainly by the use of a cystoscope. Though, of course, it is quite common to find one or other associated with prostate disease, any one of them may be the only cause of the symptom of frequency.

In practically all cases of prostatism there is œdema of the trigone of very varying degree and this makes it absolutely impossible to estimate by the cystoscope the real amount of hypertrophy. The truest picture can be seen in the prostatic urethra, where any enlargement of the lateral lobes shows up very clearly.

This practically accounts for all the ordinary types of benign enlargement of the prostate likely to be encountered, namely, (i.) enlargement of glands of Albarran, (ii.) lateral and middle lobe enlargement, (iii.) posterior lobe enlargement. And these conditions can be met with singly or in combination.

Enucleation is advised in all cases except when the enlargement of the glands of Albarran is reasonably small and only then when there is no lateral lobe enlargement. In this type of case a punch operation can be successfully performed.

The other types of prostatism are the result of inflammation and are associated with no real enlargement of the gland; in fact the gland is generally smaller than usual. Prostates of this type are (i.) those in which the firm fibrous bar exists on the posterior aspect of the internal meatus apparently in the internal sphincter, (ii.) those in which a firm fibrous collar encircles the whole of the meatus and apparently the prostate is an ordinary small fibrous organ. Both types are obstructive to the passage of a cystoscope, the former especially makes the instrument jump as it passes into the bladder after a previous easy passage along the urethra. Neither condition is amenable to enucleation and should be dealt with with some type of punch operation.

Then come the abnormal conditions of the *verumontanum*. That the *verumontanum* can attain an enormous size is certain and in such cases fulguration is claimed as magical in its effect. That conditions of the trigone and prostatic urethra are influenced by sexual irregularities seems very reasonable to me, but these irregularities are as a rule accompanied by such well marked neuroses that I would not like to make any sweeping deductions from the results of any special line of treatment.

Apart from the conditions mentioned prostatic abscess and calculus have to be considered. I have had two cases of the former; both apparently were due to infection in small hypertrophied prostates; the infection was of a low type and was only discovered at operation. The prostates were enucleated in the ordinary way and the patients did well. Multiple small prostatic calculi exist quite commonly in the prostatic age and always in my patients in adenomatous prostates. They are cleaned out with the enucleation. Single, fairly large calculi form in recesses of the prostatic portion of the urethra and generally in younger

[1] Read at a meeting of the Queensland Branch of the British Medical Association on June 5, 1925.

men. I have had one patient, a young man of thirty years. The cystoscope was passed with difficulty, but revealed the stone projecting into the urethra. There was an associated abscess in one lateral lobe and a bilateral pyelonephritis and trigonitis. The stone was removed through the perineum and the prostate massaged. His immediate result was perfect, but there is a tendency for the stone to reform in the recess, though I did my best to destroy it.

Now it must be recognized that a prostate, the seat of adenomatous changes, must be very liable to inflammation with its consequent swelling. Slight degrees of swelling in this region may make all the difference to the amount of obstruction and consequent renal impairment. With this in mind we give any adult male with only early prostate symptoms a regular routine treatment. His teeth and gums are carefully cleaned; his bowels are regulated, his alcoholic consumption is regulated and if his urine is scanty and highly acid, he is put on alkaline diuretics.

If these means are effective, well and good. If not, thorough investigation must be entered upon and in all patients of prostatic age or of any age if they complain of tenesmus, I insist on them going into hospital before I pass a cystoscope. Any patient who needs cystoscopy, generally needs operation of some sort and when they are handled in this way patients are saved the unpleasant experience of having an instrument passed when it is not necessary to do so.

The following case history will show the importance of œdema as a contributing cause of obstruction:

An adult male, aged forty-nine years, complained of hæmaturia and albuminuria of eighteen months' duration. His systolic blood pressure was 175 millimetres of mercury and his diastolic pressure 80 millimetres. He was very "nervy" and his renal efficiency was low. Cystoscopy showed a small calculus in his bladder; the lateral lobe was not enlarged, but a large intravesical projection was found. I eventually opened his bladder and removed the stone and put a tube in for drainage purposes. He improved very rapidly, but after three weeks the bladder was still draining and I thought the wound would not heal up without enucleation of the prostate. This he refused at the time. The wound healed a few weeks afterwards and six months later he had a blood pressure of under 140 millimetres of mercury and was a normal, healthy man to all appearances. Unfortunately nothing on earth would make him let me examine him with the cystoscope again. I have no doubt that the intravesical projection still exists to a certain degree and probably needs removal by punch or enucleation. But a large amount of the obstruction must have been caused by œdema due to the irritation of the calculus, otherwise his suprapubic sinus would not have healed, nor his general condition become normal.

When enucleation has been decided upon as necessary, treatment is proceeded with somewhat on the following lines.

A careful bedside examination is made. The general appearance and condition of tongue and teeth are noted. The symptoms, especially in regard to thirst, digestive disturbances, fatigue, backache, urinary symptoms and so forth are recorded.

The blood pressure and condition of arteries are estimated. The mouth and gums are made clean. The renal efficiency is estimated. The ordinary tests are always noted and in addition one or more of the following tests: the indigo-carmine test, the urea concentration test or the salivary urea estimation test.

In carrying out the indigo-carmine test four cubic centimetres of a 4% solution of indigo-carmine are injected into the buttock and the time of excretion is noted. Appearance of dye in under twenty-five minutes indicates a reasonable "surgical risk."

The urea concentration test is carried out as follows: From 6 p.m. to 6 a.m. no food nor drink is given; at 6 a.m. the bladder is emptied, the patient drinks fifteen grammes of urea dissolved in one hundred cubic centimetres of water. A specimen of urine is collected at 7 a.m. and again at 8 a.m. If over one hundred and fifty cubic centimetres are passed in the first specimen or one hundred cubic centimetres in the second, a third is collected later at 9 a.m.. No drink nor food is given till the test is over. If over 2% of urea is found, operation may be undertaken with safety. A percentage of 1.5 indicates that operation is moderately safe and 1% is a contraindication.

A salivary urea estimation is often of help in summing up the case.

Although I always do one or more of these tests, I believe that they are only to be used in conjunction with one's clinical impression of the case. I do not remember any occasion on which I thought a patient fit for immediate operation and the tests proved him unfit, but I confess I have several times considered him unfit when the tests have suggested him fit. In such circumstances I always do preliminary treatment before operation, so am not in a position to argue whether I or the test was right. I must also admit that most of my patients suffer from severe complications, retention, hæmaturia, pyuria *et cetera* and I can quite imagine how valuable the tests would be in weighing the "pros and cons" in early cases in trying to decide whether enucleation is safe or not.

If immediate operation is decided on as feasible, an ordinary suprapubic enucleation is performed in one stage.

If the decision is against immediate operation an attempt to get the patient fit enough for enucleation is made. He is put to bed and ordinary medical treatment is given by suitable diet, purgatives and so forth.

If his urine is alkaline an acid mixture is given him; if highly acid, an alkaline mixture is used. The urine is tested every day and an attempt is made to have it just reasonably acid at the time of operation. By getting rid of its alkalinity, one certainly decreases the risk of an encrusted cystitis and an encrusted wound after operation and by diminishing the acidity one increases the amount of excretion and diminishes the risk of reactionary anuria. I have noted the extreme acidity mainly with the prostates in which the in-

flammatory condition predominates and as these are the cases in which it is most difficult to get good results, the urinary treatment is an item worth remembering.

The special treatment to improve the renal function is mainly directed towards relieving the residual urine. The methods adopted are mainly: (i.) by tying in a catheter, (ii.) by passing a catheter daily at regular intervals, (iii.) by a suprapubic cystostomy.

There are more elaborate methods used, mainly in cases of complete retention, but I have had no experience of them. I intend simply to record my own practice.

If a catheter can be passed, the urine is let out gradually, one hundred and eighty to three hundred cubic centimetres (six to ten ounces) at a time according to the patient's condition and the amount of residual urine. If the patient or his urethra will tolerate it, the catheter is then tied in, otherwise the catheter is passed two or three times a day. In cases of cystitis the bladder is washed out with mercurial oxycyanide solution of a strength of one in four thousand or upwards. If a catheter cannot be passed, suprapubic cystostomy is done and a catheter tied tightly into the bladder; the urine is then allowed out in small amounts as before.

By these means it is astounding what improvement one can get in a patient's general condition and generally in a week or ten days he will be quite fit for operation.

I believe the suprapubic drainage is easily the most potent treatment for these patients, but it certainly makes the enucleation more difficult and in consequence the operation should always be done in one stage if possible. I do not think I have any special way of doing the actual operation. In opening the bladder I have a catheter in the urethra if possible and distend the bladder only when necessary and then only while I am watching and the water is immediately allowed to flow out again when the bladder is found. I find it a great help to define the peritoneal reflection in this way. Every bladder is not necessarily easy to define and open and though opening the peritoneum inadvertently is harmless enough if noted and repaired, yet I personally prefer not to do it.

After enucleation I remove any large clots, tie in a large tube and a small prevesical one. Saline solution is given by the rectal or subcutaneous route in small quantities if there is any indication for its use. The small tube is taken out in two days and the large one in four. The bladder is irrigated after that if dirty. The patient generally passes urine in fourteen to twenty-one days.

Persistence of urinary symptoms after recovery is due either to local conditions in (i.) the prostatic portion of the urethra (incomplete removal, tags of mucous membrane or ledge formation and calculus), (ii.) in the bladder (infected diverticula or calculi), (iii.) renal conditions, calculus, pyelonephritis with or without hydronephrosis. All these conditions will need surgery, if severe enough, with the possible exception of the last, namely, pyelonephritis. This condition really indicates permanent and progressive damage to the kidney substance as it is generally due to bacterial infection *plus* prostatic obstruction. I intend to try intravenous injection of gentian violet and neutral "Acriflavine" in this condition. Anyhow strict attention to bowel treatment has been wonderfully successful in several cases.

Patients that would have needed a punch operation, have always in my practice been the subject of some lateral lobe enlargement, so at present I can give no personal experience of this operation. Their preliminary treatment is handled on the same lines as for enucleation.

Prostatic abscesses and small calculi have always been associated with prostatic hypertrophy, suprapubic enucleation has been performed and the patients have done well.

When I consider that in one article it is claimed that most men over the age of fifty have some enlargement of the prostate and in another article that 98% of adult males have some enlargement of the glands of Albarran, I hope you will find this paper of some interest. We all may find some consolation in the fact that in the first article the writer goes on to say that many patients have no symptoms and less than 50% of those with symptoms need surgery and in the second article the writer admits that often the enlargement in the glands of Albarran is only microscopical.

THE CLINICAL CONDUCT OF PREGNANCY.[1]

By Robert Fowler, M.D., F.R.C.S., F.A.C.S.,
University Demonstrator in Obstetrics, Melbourne.

Allow me to express my sincere thanks for the considerable honour conferred upon me by the invitation to address you this evening.

Our subject will be that portion of preventive obstetrics which deals with the clinical conduct of the antenatal puerperal period or in other words with the management of pregnancy. Such a discussion will open up a problem in which we are all keenly interested, namely the reduction of puerperal morbidity and mortality.

Already I have made use of phraseology which is sadly lacking in exact definition. I refer to the words "puerperal" and "morbidity." "Puerperal" (Latin: *puerperus* = child-bearing) should not be restricted to qualify merely the events of the puerperium, but should equally appertain to the processes of parturition and pregnancy. Puerperal processes, therefore, may be either antenatal, intranatal or postnatal in time. Furthermore, they may be either natural or morbid in character. Instances of natural puerperal processes are decidual formation, spontaneous vertex deliveries and normal

[1] Read at a meeting of the Ballarat "Division" of the Victorian Branch of the British Medical Association on June 13, 1925.

lactation. Morbid puerperal processes include such happenings as ectopic gestation, face presentations and puerperal infection irrespective of the nature of the lesion or the time of its onset.

Why in obstetric nomenclature the significance of "morbidity" has been limited to the designation of "fever in the puerperium" is not quite clear. Such a usage is prejudicial to a correct appreciation of the manifold morbid changes incidental to or associated with the puerperal state.

With this preliminary clarification of terminology, we are in a position to ask what are the morbid processes liable to attend puerpery and further to what extent and in what manner antenatal clinical methods are applicable in their prevention?

These morbid processes may be grouped as follows: (i.) Intercurrent disease, (ii.) toxæmia, (iii.) hæmorrhage, (iv.) trauma (from difficult labour), (v.) sepsis.

It is necessary to bear this classification in mind, for not only is it the key to the subsequent arrangement of this lecture, but it renders evident the points at which prevention is possible.

At all times preventive methods are operative *en échelon;* there is a first and second line of defence. Primary prophylaxis by seeking the fundamental causes of disease endeavours to forestall even the initiation of morbid processes. An example of such is the enforcement of the aseptic ritual in obstetrics.

Secondary prophylaxis consists in so artfully managing established morbidity that recovery results rather than death or permanent disability. As an example one may cite the successful therapeusis of breech presentation which, especially in *primigravidæ* is a potential cause of either death or disability to both mother and child.

I shall proceed now to discuss each of the several disease groups and their antenatal management.

Intercurrent Disease.

It is customary to classify diseases occurring during pregnancy into those peculiar to this state and those more or less accidentally associated with it, but in some instances (for example renal disorders) this distinction is by no means absolute.

To discuss all the diseases that might possibly occur in association with pregnancy would be an impossible and useless procedure. Statistical evidence and experience in the antenatal clinic lead us to single out the following for consideration, namely dental sepsis, venereal disease, cardiopathy, phthisis, pyelitis and chronic nephritis.

Dental Sepsis.

An old saying is "every child a tooth." Certain it is that dental caries so generally prevalent in Australians, is particularly prevalent during pregnancy.

Antenatal examination of the mouth is a routine procedure in my practice and dental treatment is ordered where necessary. The popular idea that dental extractions are prone to cause abortion is, I am sure, quite fallacious and in none of my cases has a dentist demurred upon this score.

Apart from toothache and local abscess or necrosis, infective dental foci may determine general debility, pyelitis or even puerperal sepsis. Dental hygiene, therefore, must be regarded as an important part of antenatal work.

The Venereal Diseases.

When once established gonorrhœa and syphilis are so dissimilar that one is loath to consider them together. Investigation in Melbourne suggests that the greater number of syphilitic infections (and I suspect the majority of the gonorrhæal) are contracted by each sex in the premarital period and that after marriage, if still present, the disease is met with in latent form.

The primary prophylaxis of venereal disease is a well established function of the Public Health Department and it appears that a diminution is occurring in the general incidence of syphilis at least. Such a result cannot fail to react beneficially upon obstetrical practice. The detection and treatment of venereal disease during pregnancy are an exceedingly fruitful field for antenatal prophylaxis.

The importance of syphilis in obstetrics can hardly be overestimated and lies in the fact that it is a familial disease. This more or less epigrammatic statement depends upon the phenomenon of placental transmission whereby syphilis is transmitted from mother to child.

The frequency of luetic pregnancies amongst the public hospital population appears to be not less than 7.5%. A routine Wassermann test is necessary for the detection of most of these infections.

Given a reasonably early pregnancy complicated by syphilis, intensive antenatal treatment will both benefit the mother and guarantee a healthy baby. It is far otherwise with untreated cases which so commonly end in antenatal death of the child or in an inheritance of congenital disease.

Therapeutic termination of a pregnancy on account of concurrent syphilis is never justifiable, although recently I had a patient referred to me with this proposal. The patient was only too ready to acquiesce, but forsook me when merely antisyphilitic remedies were applied.

The importance of gonorrhœa in obstetrics lies in its relation to *ophthalmia neonatorum* and to puerperal sepsis. The antenatal treatment of endocervicitis will reduce the incidence of both these sequences. Zweifel (1920) supports this statement with a large and well controlled series of cases. Personally, my experience is not large. Topical treatment during pregnancy is recommended by Kidd and Simpson (1924), but is troublesome to carry out.

Cardiopathy.

In regard to cardiopathy I shall attempt nothing comprehensive, but merely raise a few points that may provoke discussion.

Firstly, as regards advising a woman with heart disease against pregnancy. This should be an uncommon procedure and undertaken only in consultation with a cardiologist. If pregnancy is forbidden, explicit instruction in methods of birth control should be given. Neglect of this precaution will almost certainly mean that the next consultation will be obstetrical in character.

In the next place, as regards the cardiopath who comes under your care already pregnant. Everything depends, of course, upon the efficiency or otherwise of the heart. The correct management of these patients depends upon precise diagnosis and prognosis. With reference to the milder cases of heart failure no interference with a first pregnancy need be contemplated. Maybe the strain will involve a remote curtailment of the mother's life, but most women would consent to mortgage a year or two for the sake of baby. Surely in some of these cases it is good practice to substitute Cæsarean section for natural labour, because not only does it obviate the stress and strain of labour, but it affords an opportunity for concurrent sterilization. If sterilization is undertaken, it is only wisdom for the obstetrician to protect himself with a written authority signed by husband or wife. Spinal anæsthesia is very suitable for operation in these patients, although the majority should stand ether inhalation well.

In another type of case it becomes obvious early in pregnancy that, if allowed to continue, disaster must ensue. Termination of pregnancy being called for, the method adopted is entirely a matter for the obstetrician. In my opinion the abdominal route has everything in its favour. It is rapid and convenient, saves the patient much exhaustion and, maybe, several administrations of anæsthetic. Moreover, for these patients sterilization is even more necessary than in the previous group.

Personally, I have done abdominal hysterotomy in such cases under spinal anæsthesia.

Phthisis.

Phthisis as a complication of pregnancy presents considerable difficulties; some patients become rapidly worse, in others no alteration is perceptible and in a few there seems to be some improvement as a result of pregnancy. Smith and Marshall (1925) have cleared up this vague position in the following way.

It is in early cases of phthisis that pregnancy produces an exacerbation of the disease. In these early cases the general condition remains good during the first few months of the pregnancy, but deterioration often commences about the seventh month and there is a rapid extension of the disease after childbirth. When the phthisis is of some years' standing and the patient is not toxic, pregnancy does little harm. In cases also of obsolete or healed phthisis the patients with few exceptions go through pregnancy and the puerperium without activation of the old lesion.

It is clear from these observations that the cases which call for interference, are the early ones, the arrested and chronic cases being allowed to go to full term.

Induction of miscarriage in the early months is only a temporary solution of their difficulty. Without proper instruction in the methods of birth control and even with it phthisical subjects of all classes of society will return again pregnant. Moreover, induction of either miscarriage or premature labour seems to do as much harm to the pulmonary condition as a spontaneous labour at term. For these reasons it is reasonable to advocate terminating the pregnancy in the small number of cases in which this will be necessary, by "abdominal abortion" (that is miniature Cæsarean section) with concurrent exsection of the tubes for the purpose of sterilization.

Pyelitis.

Pyelitis is coincident with pregnancy sufficiently often to have occasioned the term "pyelitis of pregnancy." Since its ætiology is imperfectly understood, a rational prophylaxis is not possible. For those of us who look upon pyelitis, pyelo-cystitis and pyelo-nephritis as expressions of the same disorder and upon the infection as descending or hæmatogenous, it is important to attend to possible primary foci. Suspicion naturally falls upon the inveterate criminals, the teeth, tonsils and appendix.

The importance of pyelitis in pregnancy lies in the exposure of the mother to the risks of renal insufficiency and of septicæmia. Besides which the fœtus is further imperilled by the occasional necessity of early induction. The successful management of any disorder implies early diagnosis, satisfactory prognosis and efficient treatment. All of these desiderata are quite difficult of attainment in pyelitis and it is only by using the cystoscope that we may be reasonably certain of our ground.

When used in conjunction with the cystoscope, the prognostic value of the renal efficiency tests is more precise. Moreover, ureteral catheterization through the cystoscope renders possible therapeutic drainage and lavage of the renal pelvis.

Besides these special methods of management in pyelitis we have to consider the curative rôle of drugs, vaccines and induction of labour. There is only one drug in pyelitis, potassium citrate in large doses. Its immediate effect upon the symptoms is usually so evident as to be almost diagnostic. Let us beware, however, lest its efficacy beguile us into believing that the cure is permanent. Pyelitis has an awkward habit of recurring and for this reason we should not lose sight of the patients.

Although a pathogenic colon bacillus is the more usual causative agent, it seems as if the bacteriology of the affection is not constant. When a bacteriological diagnosis is established, vaccine therapy should be tried. The maximum effect is obtained by giving autogenous vaccine by the intravenous route. We may commence with fifty millions and be guided by the reaction as to subsequent dosage. I have gained the impression that vaccine treatment

is of benefit in getting rid of bacilluria and in reducing the tendency to recurrence.

If the patient does not improve under a combination of the methods already mentioned or should she come under observation late, induction of labour must then be considered. Bearing in mind the prominence of urinary stasis as a factor in pregnancy pyelitis, it is not surprising that evacuation of the uterus is effective in giving relief. In cases occurring early in pregnancy every effort should be made to tide the patient over by other means until the fœtus is viable; from the thirty-sixth week onwards no hesitation need be felt about inducing forthwith.

In the management of pregnancy pyuria care should be taken not to miss the occasional case of renal calculus or tuberculosis.

The following is a case in point:

Mrs. X. had six children previously and was nearing the eighth month of a twin pregnancy. There were pyuria, loss of weight and anæmia of some weeks' duration. No response occurred to potassium citrate and pelvic lavage. The condition was regarded as an obstinate, but simple pyelitis and the pregnancy was terminated by vaginal Cæsarean section. The twins lived, but the mother died four days after delivery. *Post mortem* examination disclosed a suppurating shell of right kidney containing many calculi.

In renal tuberculosis, if unilateral, the treatment is nephrectomy; the pregnancy should be left alone. If bilateral, interruption of the pregnancy is necessary in all cases.

Chronic Nephritis.

The coexistence of human gestation and renal disorder is remarkable for its potential frequency. Not only may pregnancy be encumbered with any of the renal risks attendant upon the non-pregnant state, but it carries an additional and peculiar liability, the so-called "pregnancy kidney." Confronted with these several hazards it is little wonder that antenatal clinicians attach the greatest importance to a routine examination of the urine. These examinations are usually carried out at monthly intervals for the first two trimesters and fortnightly thereafter, although Brown Craig (1924) states that the practice at the Royal Hospital for Women (Paddington, New South Wales) is a weekly examination for the last eight weeks in *multigravidæ* and for the last twelve weeks in *primigravidæ*.

The subject of chronic nephritis in pregnancy is so inextricably mixed with that of the gestation toxæmias that they are best considered together.

For convenience we shall also discuss the glycosuria of pregnancy in the same section.

Gestation Toxæmia.

Strictly speaking, we should not proclaim the existence and influence of toxic agents until they have been actually demonstrated; nevertheless, the term "gestation toxæmia" is now widely used to designate a group of clinically recognizable disorders of unknown ætiology. Those of the first half of pregnancy are gastro-hepatic in type; those of the second half are cerebro-renal. Characteristic of the gastro-hepatic type are pernicious vomiting, acidosis and jaundice, whereas albuminuria is a late and unobtrusive symptom. Characteristic of the cerebro-renal type are fits, azotæmia and œdema, albuminuria being early and severe.

Causation being unknown, primary prophylaxis is not possible. On the other hand secondary prophylaxis (meaning the antenatal detection and management of initial symptoms) is highly successful and of the utmost importance. In this wise do we hope to prevent the occurrence of eclampsia, puerperal insanity or permanent impairment of retina, kidney and liver, not to mention fœtal death or other sinister legacies of toxæmia.

In view of these considerations an enumeration of symptoms and their significance now becomes necessary.

Albuminuria of Pregnancy.

Apart from pyuria and other complicated albuminurias the occurrence of simple albuminuria at some period of gestation appears to be an exceedingly common event. It is variously assessed by different observers at from 5% to 50% according to the delicacy of the tests and the frequency of their application. The presence of albuminuria may be antecedent to the pregnancy or may develope during its course, either insidiously or in an exceedingly abrupt manner. In the absence of a definite history one of the first questions to arise is whether or not the anomaly was preexistent. Its discovery in the earlier part of pregnancy with the presence of pronounced cardio-vascular phenomena and retinal changes would suggest that such was the case. Its appearance in the latter part of pregnancy, if it had been absent at the time of previous examinations would, of course, suggest the opposite. A further question to arise is, whether the albuminuria is of any sinister significance at all?

Maclean states: "Albuminuria is by no means a rare condition, and is often found in the absence of renal disease. Even when accompanied by casts there is no proof that the patient is suffering from defective kidneys." De Lee on the other hand distrusts any suggestion of physiological albuminuria. Whilst allowing that the presence of albumin always imposes the obligation to determine the cause, so far as this is possible, we must, I think, conclude that not uncommonly during pregnancy this symptom is of little or no importance and that failure to appreciate this fact has been the cause of needless misery to many women and a dangerous handicap to many babies prematurely induced. In order to exclude, therefore, the insignificant albuminurias and to classify more minutely the significant, it will be necessary to scrutinize systematically other avenues of renal symptomatology.

Excretion of Salts and Water: Hydræmic Symptoms.

The volume of the urine normally varies within limits which are sufficiently wide to include the minor fluctuations of normal pregnancy. Polyuria is a symptom of the arterio-sclerotic kidney, but this is usually a postclimacteric affection. I recently saw in consultation a patient whose pregnancy was complicated by an antecedent *diabetes insipidus* [with a polyuria up to eight and a half litres (three hundred fluid ounces) *per diem*] without reciprocal

disadvantage to either condition. Oliguria is an important and sinister sign in albuminurics and patient and doctor should be alert to detect its onset. It may amount to absolute anuria during eclampsia. Acute *post partum* suppression has also been reported.

Anasarca if present is of the vagrant renal type. It may precede albuminuria. Œdema of the eyelids, ankles, hands and particularly of the vulva are common. This latter complication may interfere with delivery. The serous sacs are not often involved. Papillœdema and retinitis are particularly grave. Their presence is usually regarded as an indication for immediate termination of pregnancy. Œdema of the lungs occurs in 10% of eclamptics and is a not uncommon cause of death. Hydræmia, of course, is present in many cases of water retention. The percentage hæmoglobin is a fair guide to its extent, as also is the degree of anæmia. Increase in body weight is sometimes used as an indication of the progress of water retention cases. As regards salt retention Zinsser attaches much importance to it in eclampsia and derives considerable diagnostic and prognostic aid from chloride estimations.

Blood Pressure and Cardio-Vascular Changes.

Cardio-vascular changes are often secondary to high blood pressure. At least one observation of both these factors should form part of every antenatal examination. In pregnant albuminurics repeated blood pressure observations are a necessity. The patient should be recumbent and not apprehensive. Persistent and excessive blood pressure early in pregnancy together with ventricular hypertrophy are indicative of preexistent chronic nephritis. When coincident with pregnancy, persistent and progressive rise in the blood pressure, although but moderate in degree, is an exceedingly ominous sign of incipient gestation toxæmia. During recovery the pressure may fall by lysis or by crisis. With full doses of "Veratrone" a dangerous fall by crisis may occur. The character and rate of the pulse are of the greatest importance in the prognosis of cases of gestation toxæmia and as an indication for the interruption of pregnancy.

Certain Neurological Manifestations and Miscellaneous Symptoms.

The neurological manifestations and miscellaneous symptoms including the eye changes will not be discussed at all fully. The whole group is difficult to classify as regards the mechanism of origin from renal inadequacy. Headache, vomiting, epigastric pain, cramps in the legs, *chorea gravidarum*, puerperal mania and hemiplegia are all met with and will require due consideration in diagnosis and management.

Coma and convulsions are symptoms which appear to indicate the penultimate stage of advanced forms of renal disorder, although fatal cases of both toxic and inflammatory renal lesions do occur without fits. An interesting speculation concerns the identity or otherwise of the processes underlying eclampsia and convulsive uræmia.

The visual disturbances which are liable to arise in the course of kidney trouble, warrant the closest attention. I regard the appearance of retinitis as an indication to terminate the pregnancy as soon as possible. Definite disturbance of vision may also occur in pregnancy without any visible morbid changes in the retinæ, as in the amaurosis of pregnancy. Loss of sight may be complete and may last for several weeks; there is always complete recovery.

Excretion of Nitrogenous Waste Products: Azotæmic Symptoms.

For some time past clinical experience has questioned the value of isolated estimations of urinary nitrogen and its partition ratios in determining renal efficiency. The ureometer has for long languished on the shelf in prematernity wards. The explanation is not far to seek as it can easily be demonstrated that even in health manifold factors cause variation in the nitrogen output.

Now that it is possible to determine the concentration of the non-protein nitrogenous bodies in the blood, direct evidence of nitrogen retention is forthcoming and also a measure of the concentrating power of the kidney for each nitrogenous fraction. The urea fraction being the largest and most readily determined, is the one usually estimated in clinical work.

Of those who derive clinical guidance from a study of the nitrogenous metabolism in the renal disorders of pregnancy, there are two main schools. The followers of de Wesselow attach chief importance to the urea concentration; the followers of Myers consider the total non-protein nitrogen of the blood as of most significance.

De Wesselow regards a blood urea above forty milligrammes per hundred cubic centimetres in conjunction with a blood pressure above 180 millimetres as evidence of a severe type of renal disability and an indication for induction in the interest of the mother. When the blood urea is below forty milligrammes he employs the urea concentration test. If the concentration is below 2%, a grave lesion is suggested and if on repetition in a few days the concentration is less and the blood pressure increased, a progressive lesion is diagnosed and induction advised. After delivery he finds the urea concentration rises rapidly unless there is a residual lesion.

Berkeley and Dodds consider that even supposing blood urea and non-protein nitrogen tests are as reliable as they are said to be, their elucidation requires technical skill and expensive equipment. Whilst admitting the value and even necessity of these tests in cases of preexistent nephritis, they propose to substitute simple tests of hepatic efficiency for guidance in the management of the toxic albuminurias of pregnancy.

The Functional Capacity of the Liver in Pregnancy Toxæmia.

The occurrence of jaundice must be regarded as a late manifestation of hepatic derangement. It is now possible to prove early *ante mortem* disturbances in the liver by appropriate functional tests.

Moreover, this information is of considerable use in the management of such cases. De Wesselow stated in 1922 that up till then no observer had been able to demonstrate *ante mortem* hepatic involvement with any constancy. He himself, using the estimation of blood lipase, fibrinogen content and nitrogen partition as tests of hepatic efficiency, was unable to demonstrate any constant changes. Since then the lævulose test and the improved dye test of Rosenthal have been investigated. Most important is the work of Comyns Berkeley and E. C. Dodds (1924) who by examining the pigmentary function of the liver claim to have demonstrated definite and useful changes in certain groups of toxic albuminurias. This has been accomplished by the use of exceedingly delicate yet simple tests for bile pigment in blood and urine.

The mechanism of the chromogenic function requires cursory recollection. You will remember that normally bile pigments on reaching the intestine are converted by bacteria into urobilin and its precursor urobilinogen and thence absorbed into the blood stream. From the blood urobilin is picked out by liver cells and reexcreted in the bile as biliverdin and bilirubin (except for a minute trace of urobilin excreted in the urine). When damaged the liver cells lose this property and the pigments accumulate in the blood, whence they appear in the urine in easily appreciable amounts.

Fouchet's test for bile pigments in the blood is sensitive for dilutions of 1 in 60,000, yet is simplicity itself. To three drops of serum on a white porcelain surface add three drops of reagent (a watery solution of ferric chloride and tri-chloracetic acid). A white coagulum forms on contact of acid reagent and serum. If the result of the test is positive, this coagulum turns greenish blue, reaching its maximum intensity in about twenty minutes. Besides Fouchet's serum test Ehrlich's and Schlessinger's urinary tests were utilized.

At the outset of Berkeley's work the toxic albuminurias of pregnancy were classified clinically into three groups: (i.) Those without other symptoms, (ii.) those with symptoms such as œdema, headache and increased blood pressure and (iii.) those with eclampsia or severe toxic manifestations.

In all but the last group there was no response to the liver tests. Interruption of pregnancy was never undertaken except in the presence of a positive response to the test. The subsequent history of all the patients justified this restraint, notwithstanding the fact that many individuals in the second group showed nitrogen retention. The authors conclude that the best indication and perhaps the only safe one for inducing premature labour in the albuminuria of pregnancy is the determination of the chromogenic function of the liver by these tests which are so exceedingly simple that they may be performed by any practitioner in a very short space of time.

Maintenance of the Hydrogen Ion Concentration of the Blood: Acidosis and Acetonuria.

The occurrence of diacetic and acetone in the urine is evidence of faulty metabolism of fats and the fatty acid groups of protein. Deprivation of carbohydrates appears to be the main ætiological factor. Normally these acids are further oxidized to carbon dioxide and water prior to excretion. Excessive production or diminished oxidation results in their accumulation in the body giving rise to toxic symptoms, a condition known as acidosis. Owing to a rearrangement in the buffer systems the hydrogen ion concentration of the blood is maintained at a constant level. In the blood sodium is the neutralizing base, but in the kidney this is exchanged for ammonia (Nash and Benedict, 1923).

The amount of acetone bodies in the urine, the plasma bicarbonate reserve and the diminution of the carbon dioxide tension of alveolar air are all measures of the degree of acidosis.

Both Rothera's test (sodium nitro-prusside) and Bertrand's test (ferric perchloride) are indicators of diacetic acid which is the precursor of acetone in the urine. These tests differ in the greater sensitiveness of Rothera's test. This gives them a quantitative value when used in conjunction, a reaction to the ferric perchloride test indicating a dangerous degree of acidosis.

Acetonuria in pregnancy may have little or no significance. Patients who are otherwise normal, not infrequently give a positive Rothera throughout (Berkeley and Dodds). Severe grades of acetonuria are highly significant. They may be found in the gastro-hepatic type of gestation toxæmia characteristic of the earlier half of pregnancy. Occasionally pregnancy is complicated by a preexistent diabetes, in which case a distinct acetonuria would threaten incipient coma and indicate the exhibition of "Insulin."

The following is a summary of the work by Harding and Potter (1923) on the excretion of acetone in the vomiting of pregnancy.

1. The amount of acetone excreted is a measure in the majority of cases of the clinical condition.

2. Abortion has the immediate effect of diminishing the production of acetone.

3. The condition calls for further supplies of carbohydrate.

4. The results are similar to those observed in starvation, except that in pregnancy the lack of and consequently the demand for carbohydrates is more urgent.

5. The bicarbonate reserve is not diminished in pernicious vomiting of pregnancy; therefore there appears to be no indication for the administration of sodium bicarbonate as a means of countering the condition. (As bearing on this point Hurtley and Trevan showed that in laboratory animals neutral diacetates given intravenously were as toxic as diacetic acid.)

6. It is clearly shown that the most successful treatment in these cases is as follows: (*a*) Complete rest with isolation; (*b*) the administration of fifty to one hundred grammes of glucose *per diem* by the rectum; (*c*) fluid by mouth or in such cases where this is not possible intravenously or interstitially; (*d*) in the few cases that do not respond, induction of abortion is successful.

It should be noted that the estimation and the interpretation of the ammonia coefficient is not as simple as the estimation of acetone. For these reasons, therefore, the latter is to be preferred both in diagnosis and control of treatment.

Obstetric Symptoms.

There is in cases of renal disorder complicating pregnancy, a liability to death of the fœtus *in utero*, spontaneous abortion, premature labour and accidental hæmorrhage. All conspire to make the prognosis worse for the fœtus than for the mother.

Management of Gestation Toxæmia.

So much for the symptomatology, now a word concerning the management of gestation toxæmia.

In diseases of unknown ætiology like the gestation toxæmias, empiricism is bound to flourish in treatment. I should like to state my belief, however, that we should not follow a standardized routine formula in these cases. "What shall I do in this case under these particular circumstances?" is always our individual problem. In any particular case some at least of the indications are clear and we should treat these, for example hydræmia, by reducing salts and water, azotæmia by reducing the protein in the diet, acidosis by increasing the carbohydrate intake.

The outstanding obstetrical problem is the interruption of pregnancy. Its rationale is the thesis that emptying the uterus tends towards the spontaneous recovery of the mother. This is a fairly widely, but by no means universally, accepted proposition. In severe cases the prognosis is so bad for the child and the dangers that beset the mother are so hideous that there is rarely hesitation in emptying the uterus. In less severe cases judgement is difficult, the response to medical treatment being the main guide.

Time will not permit of a discussion of the methods of termination.

Glycosuria of Pregnancy.

During routine antenatal analysis of the urine reduction with Fehling's solution is not unusual especially in the latter months of pregnancy. In most cases if sugar is present, it is lactose. Differentiation of lactose from glucose can be performed by the osazone test, the crystals of glucosazone and lactosazone being easily identified. With the polarimeter although both are dextrorotary, the angles of rotation are quite different. The easiest test for general use is the fermentation test, glucose but not lactose being fermented by yeast. The urine being boiled to arrest bacterial action, is put up with yeast and allowed to stand for several hours in a warm place. At the end of this period reduction with Fehling's solution indicates the presence of lactose as, unlike glucose, it will have been unaltered by the yeast.

Having established the presence of frank glycosuria, the question as to its relative significance or insignificance will arise and, further, the question of its preexistence or coincident origin with pregnancy. The advances in the knowledge of the bio-chemistry of the blood have shown the not infrequent existence of certain cases of insignificant glycosuria (renal glycosuria) apparently due to what is known as "leaky" kidneys. Such "leaks" are increased in frequency during pregnancy. In fact the reduction of sugar tolerance has been made use of in the diagnosis of early pregnancy.

In 1920 Frank and Nothmann showed that glycosuria followed the administration of one hundred grammes of grape sugar in twenty women with very early pregnancy. As in renal glycosuria the blood sugar level was not increased. Other workers with this test have found one hundred grammes nauseous and expensive and have reduced the amount taken by making use of another fact, that is, that after the injection of one cubic centimetre of "Adrenalin" (1:1,000) glycosuria only rarely occurs in the non-pregnant, whereas in pregnancy it is the usual occurrence. The perfected test is as follows: Having obtained a control sample of urine immediately prior to the test the woman takes two hundred cubic centimetres of tea containing ten grammes of grape sugar on a fasting stomach. After twenty minutes a 0.5 cubic centimetre of "Adrenalin" (1:1,000) is injected. Urine collected three-quarters of an hour after injection contains sugar in 95% of early pregnancies, as also does that collected one and a quarter hours afterwards. This test has been made of further use in the prognosis of early threatened abortion. In threatened abortion during the first three months the appearance of sugar in the urine indicates that pregnancy will continue, whereas if sugar does not appear it indicates that the developing ovum is dead and may be evacuated at once.

It will be seen, therefore, that glucose in the urine appears to bear much the same relation to diabetes as albuminuria does to nephritis (Maclean), sometimes being of extensive significance, at others of little importance. Renal glycosuria is a harmless condition and requires no management other than insuring adequate amounts of carbohydrate in the diet. True diabetes is nearly always antecedent to pregnancy and is a rare combination owing to the usual sterility of diabetics. When pregnancy does occur, it is usually in a *multipara* who acquires diabetes after starting to bear children. These patients must be watched carefully. In over 25% their pregnancy ends by abortion or very premature labour. Few go to quite full term. Prospects for the fœtus are very poor (40% only are born alive at the end of pregnancy and of these many are debilitated). The risk of coma is greatest during labour and a further remote risk is acquired pulmonary tuberculosis. In fact a few years ago statistics were published showing a maternal mortality of 27% during labour and the puerperium (from coma) and a further 23% within two years (from pulmonary tuberculosis). With modern antidiabetic treatment including "Insulin" combined with alert clinical observation and chemical investigation, the prospects are not as bad. As regards the obstetrical treatment no hesitation should occur in interrupting the pregnancy (having due regard to anæsthetic risks), if untoward clinical or chemical indications should arise.

Puerperal Hæmorrhage.

Antenatal puerperal hæmorrhages may be uterine or extra-uterine. The latter occur in connexion with

ectopic pregnancy; the former occur from the placental site in connexion with abortion, *placenta prævia* and *abruptio placentæ*.

Ectopic Pregnancy.

Internal hæmorrhage from ectopic pregnancy is a serious and comparatively frequent antenatal emergency. Ectopic gestation is said to occur about once in one hundred pregnancies. Its occurrence at once places the woman's life in serious jeopardy.

The causation of extrauterine implantations is unknown, so that we are powerless to prevent this astonishing aberration of Nature. Fortunately the condition usually gives definite indications of its presence and practitioners are alert in its recognition and in the application of the appropriate treatment, namely the arrest of the bleeding and termination of the pregnancy by abdominal operation.

Abortion.

Hæmorrhage in connexion with miscarriage is the most frequent of all antenatal accidents. As a rule the circumstances of its occurrence are outside medical control, the reduction of the abortion rate being largely a sociological problem.

There are, however, some local causes of abortion which are amenable to antenatal correction. I refer more particularly to retroversion. Manual correction of retrogravid uterus (usually under general anæsthesia) followed by insertion of a ring pessary is a highly successful procedure in most cases. The prevention of abortion by the treatment of intercurrent disease has already been discussed.

Placenta Prævia.

The causation of a low implantation of the placenta is unknown so that primary prophylaxis is not possible. Cases in which it occurs, are a grave anxiety to all concerned in their management. The condition usually declares itself by repeated, painless hæmorrhages in the last two months of pregnancy. Frequently labour commences prematurely and the correct management of the condition becomes an intranatal problem.

For women not in labour the safest antenatal treatment is to terminate the pregnancy as soon as reasonably possible. The possible exceptions would be those in whom a living child is of paramount importance and then only when the patient is under constant expert observation in an A grade surgical hospital.

In an ordinary case the methods of termination are in order of preference:

(1) Induction by rupture of membranes. This is the simplest, least risky, but is only applicable in mild cases of lateral *placenta prævia* preferably in *multiparæ*. Injections of "Pituitrin" should be added.

(2) Induction by bringing down a half breech. This is the method generally employed and is applicable in the majority of instances. Except in the rare case of breech presentation a preliminary bipolar version is necessary which is a procedure of some difficulty. The maternal mortality is about 12% and the fœtal about 75%.

(3) Operative evacuation of the uterus by abdominal Cæsarean section. Since first suggested by Lawson Tait (who was ridiculed for the suggestion), the indications for this treatment have been extended since his time. It is especially applicable in the grosser types of *placenta prævia* occurring in *primiparæ* with the child in good condition.

Maternal mortality is from 10% to 12%, but the fœtal mortality should be next to nothing.

Accidental Hæmorrhage (Abruptio Placentæ).

Evidence is accumulating to show that the causation of accidental hæmorrhage is wrapt up in the ætiology of gestation toxæmia. It follows that primary prophylaxis must be directed towards the elimination of toxæmia.

In the management of established cases we may recognize two clinical types, the mild and the severe. The milder cases are best treated by tight vaginal tamponade and induction of labour by drugs. The really severe cases are amongst the gravest obstetrical emergencies and usually require some operative interference, the prospect for the mother being bad, that for the fœtus hopeless.

Puerperal Trauma.

Prevention of birth traumatism (maternal or fœtal) by the circumvention of dystochia is one of the chief rôles of the antenatal clinician.

It is regarding this branch of the work that the aphorism of Eardly Holland is so apt. Using the phraseology of the army in which he had recently served, he said: "Intranatal methods are the tactics, whereas antenatal methods are the strategy of obstetrics."

To use a time worn classification the causes of dystochia may reside in the powers, the passage or the passenger. We shall consider, therefore, the antenatal prevention of dystochia from either inertia or from obstruction. The latter may be maternal or fœtal in origin. Amongst maternal factors we may recognize pelvic contraction, pelvic tumour, cervical stenosis and rigidity. Amongst the fœtal are congenital anomalies (such as monstrosity, hydrocephalus, twins), postmaturity, faulty lie (transverse), malpresentation (breech, face, brow) malposition (occipito-posterior). A few of the commoner of these conditions will now be discussed.

Inertia.

Impending inertia may be recognized in the last few weeks of the antenatal period by a tendency for the uterus to sag at the sides and by its lack of irritability and failure to respond to stimulation. For this condition it is a good plan to follow Blair-Bell's example and to administer calcium lactate three times a day and small doses of infundibular extract occasionally.

Pelvic Contraction.

Pelvic contraction appears to be uncommon in the indigenous Australian population and I have the impression that most of our patients are "imported." The chief use of instrumental pelvimetry is to cultivate and correct our conception of pelvic mensuration as gained by manual pelvimetry. In practice chief reliance will be placed upon manual methods in estimating the relative sizes of head and brim. Moreover, besides mensuration there are other clinical signs of disproportion, such as non-descent of the head in a *primiparæ* within a week or two of term.

In most cases of pelvic contraction detected not later than the thirty-sixth week the essentially British operation of induction with bougies should be feasible and give good results. We may well reserve Cæsarean section for gross cases and for those in which the head does not engage after trial labour of six to eight hours.

Breech Presentation.

It is especially important in *primiparæ* and advisable in *multiparæ* to endeavour by external version to correct a breech presentation in the last few weeks of pregnancy. I do not remember succeeding without the help of an anæsthetic and the Trendelenburg position. My best success was under spinal anæsthesia with the consequent flaccidity of abdominal muscles. After correction spontaneous recurrence is apt to occur so that a tight binder with quinine induction forthwith is good treatment. The likelihood of permanent correction varies inversely with the ease of performing the version.

Irving Potter's description of podalic version and breech extraction has considerably reduced my apprehension of breech deliveries. Nevertheless, I should always attempt antenatal correction.

Occipito-Posterior Positions of the Vertex.

Potter states that over 60% of vertex presentations are posterior in position at the onset of labour (and he should know!). In antenatal examinations at least 30% seem to be such. It follows that spontaneous rotation occurs in most cases, nevertheless it is a tedious business at best and a dangerous one too often. It might be said that a persistent posterior occipital position is the beginning of all evil in confinement cases.

As regards antenatal correction, Buist (1922) has given us a simple and eminently successful method of rotating with abdominal pads and binder. I strongly advise any of my hearers who are not familiar with this technique, to acquire and practise it forthwith.

Puerperal Sepsis.

The reduction in the incidence of puerperal sepsis has been and still is a matter of intranatal technique. There is a good deal of evidence to show that even with the most perfect asepsis in the conduct of parturition a certain irreducible minimum of puerperal infections occur.

In any case the question arises to what extent may antenatal methods contribute towards the prevention of this malady. Already I have put forward certain suggestions regarding the antenatal management of intercurrent dental infections, pyelitis and endocervitis. Apart from these measures and general hygienic precautions, but little else is practicable.

Other suggestions include prophylactic vaccination against prevalent strains of pyogenic organisms and the prophylactic use of antisera when any operative interference is undertaken.

In conclusion allow me to thank you for your very kind attention to my remarks. From their substance I think it should be manifest that obstetricians are keenly alive to the preventive aspect of their art, more particularly as regards the antenatal department which the late J. W. Ballantyne did so much to originate and perfect.

I shall perorate in the words of Dame Janet Campbell, M.D.: "Until antenatal supervision is accepted by patients and their advisers as the invariable duty of the professional attendant engaged for the confinement, we shall never make substantial progress towards reduction of maternal death and injury. It is the key to success in any scheme of prevention and it must be insisted upon in season and out of season until it is recognized as a necessary part of the management of every confinement case."

Reports of Cases.

NOTES ON CASES OF FILARIASIS IN NORTH QUEENSLAND.

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The following cases of filariasis in Europeans who have come recently under the notice of the authors, are considered of sufficient importance in respect of the question of diagnosis and treatment in the tropics to justify publication. They are typical of many other cases. Their interest lies not only in their diversity, but also in the profound influence which a correct diagnosis has upon subsequent treatment.

J. W. W. Stephens and Warrington Yorke[1] write:

> Little precise information is available regarding the frequency with which *Microfilaria bancrofti* is found in the blood of the various diseased conditions which are commonly supposed to be due to infection with *Filaria bancrofti*.
>
> The essential morbid changes believed to be due to *Filaria bancrofti* are confined to the lymphatic system and are: (i.) Inflammation:—lymphangitis and adenitis; (ii.) dilatation with or without rupture:—lymphangiovarix and adenovarix with or without lymphor-

rhagia and chylorrhagia; (iii.) hypertrophy:—hyperplasia and fibrosis, elephantiasis;[3] (iv.) venous thrombosis; (v.) hæmorrhages; (vi.) synovitis.[3]

For the cases under review the following outline which actually is included in the above general classification, will be adopted:

(i.) Filarial nodules in tissues and adult filariæ in lymphangiovarix.
(ii.) Lymph scrotum;
(iii.) Hydrocele:
  (*a*) Simple;
  (*b*) With venous thrombosis on spermatic cord;
  (*c*) Double, with enlarged left inguinal lymph glands.
(iv.) Filarial synovitis;
(v.) Acute abdominal crises;
(vi.) Conclusions.

In the summaries of the histories of the cases only the relevant facts have been noted.

Filarial Nodules in Tissues and Adult Filariæ in Lymphangiovarix.

Case I.—A female, aged eighteen years, was born in Ravenswood, North Queensland; she has spent holidays in Brisbane, has lived for the past ten years in Townsville and has never been out of Queensland. Seven years ago she was operated on for appendicitis. Five years ago microfilariæ were found in her blood. During the last few years she has had several severe attacks of vomiting at intervals of three to four months for which she did not seek medical advice. At the end of October, 1924, she consulted one of us (E.H.) for a painful lump in the left breast which used to come and go. When at its largest it was about the size of a walnut. On examination a definite lump was found in the left breast with an area of redness over it. At the same time there was noticed a small swelling on the median side of the left arm about midway between the shoulder and the elbow practically on the line of the brachial artery. The patient stated that she had noticed it there for some time and that it used to come and go and on squeezing it the lump vanished, leaving to her examining fingers a feeling of sand or grit in the arm.

On November 16, 1924, the blood was examined and microfilariæ were found to be present.

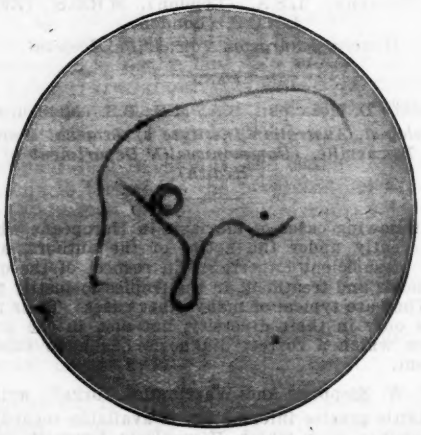

FIGURE I.

Reproduction of photomicrograph by P. H. Manson-Bahr illustrating *Microfilariæ bancrofti* in hydrocele fluid. The embryo on the top of the photograph has escaped from its sheath. The appearance of the sheathed specimen is typical of those usually found in films of hydrocele fluid or in blood films. They are best demonstrated if the blood film is (*a*) dehæmoglobinized with 2% solution of acetic acid and 1% solution of formaldehyde and then (*b*) stained with methylene blue (watery solution).

FIGURE II.

Original photomicrographs of stained sections of the pathological tissue obtained from Case I. Note (*a*) transverse sections of filariæ, (*b*) almost longitudinal section of a filarial worm lying near broken area across the centre of the field.

On November 17, 1924, a small lump on the left arm was removed and the tissue was forwarded to the Laboratory of the Department of Health, Townsville, for examination. It was not considered advisable to incise the breast tumour which disappeared without any surgical treatment.

On December 20, 1924, the patient noticed a lump in the right breast, but this also practically vanished without operation. The patient was quite healthy in appearance and of good colour. There was no abnormality in regard to bowel action, micturition or menstruation. The blood has been examined at monthly intervals since the operation. At the last examination in January, 1925, microfilariæ were found. The small piece of tissue about the size of an almond nut excised from the left arm in November showed on one side a small sac, apparently a dilated lymphatic vessel, from which a coil of worms was obtained. These were found on being unravelled to be adult filariæ, seven in number. Sections were cut of the remainder of the tissue and on examination nodules of filariæ were found to be present; isolated worms were also found embedded in the tissue and cut through at various angles. The photomicrographs showed a transverse section of the worms while in the centre near the broken area a parasite appeared in longitudinal sections (see Figure III.). In Figure IV. the worm nodules in the tissue and the cellular reaction against the infection are well seen.

Lymph Scrotum.

Under the heading of lymph scrotum the following two cases are of interest.

Case II.—A male, aged fifty-one years, was feverish on admission to hospital and complained of pain and swelling in the scrotum and inguinal regions.

On examination of the affected part on October 4, 1924, there was a profound inflammatory reaction in the scrotal sac which was swollen to the size of a child's football, being red and shiny in appearance and firm and hot to the touch. The inflammatory reaction extended on to the lower part of the abdominal wall, chiefly in the left inguinal region. The left inguinal glands were somewhat swollen, the area of skin redness extending beyond the limit of the inguinal glands. Two other facts about the patient were that he was extremely deaf which made the

taking of a complete history difficult, and also that he had a chronic fibrotic arthritis of the left knee joint with much thickening of soft tissue and a very limited range of movements. The inflammation and swelling gradually subsided as the acute filarial crisis passed off and the patient was discharged five days after admission. Subsequently in January, 1925, he was readmitted for investigation of a renal complaint, but no finality was reached regarding it. On October 5, 1924, microfilariæ were found present in the blood stream.

Case III.—A male, aged thirty-nine years, was born in North Queensland, where he has lived all his life except for occasional holidays spent in New South Wales. Ten years ago he was operated on for appendicitis by one of us (E.H.). Three weeks after he returned home, the patient had a feverish attack and on his blood being examined, microfilariæ were found. He states that at intervals since then he has had slight swellings of the scrotum for which he has not consulted a doctor because of their fleeting character. Six years ago he had a severe attack of vomiting and abdominal pain when on a visit to the western area of North Queensland. This was coincident with a slight swelling of the scrotal sac. It was evidently a filarial attack and soon passed. Two years ago he was operated on for left inguinal hernia. In January, 1925, symptoms of recurrence took place and he consulted one of us (E.H.).

At examination on admission to hospital the temperature was 39.5° C. (103.2° F.); an inguinal hernia was present on the left side. On account of the feverish condition which the surgeon decided was of filarial origin, the operation was postponed for a couple of days, but it was then considered that further delay was inadvisable.

At operation when the skin incision was made, the skin was found to be swollen and exuded much lymph. The hernial sac contained some bowel, but chiefly omentum and all these abdominal contents were replaced. After the operation the scrotal sac swelled up to a very considerable size and on examination the swelling was found to be partly in the scrotal wall and partly in the coverings of the testis and cord. The skin was stretched smooth and was red and shiny in appearance, the whole picture suggesting an acute lymph scrotum of filarial origin. Later, when the swelling was subsiding, the upper layers of the epithelium of the scrotal skin started to peel. The patient made a good recovery. During his stay in hospital it was noted that his left index finger became stiff and sore, suggesting to him a rheumatic arthritis.

FIGURE III.

Original photomicrographs of stained section of the pathological tissue obtained from Case I. Note (*a*) rounded worm nodules in the tissue, (*b*) cellular reaction of the tissues against the infection appearing near the edge of the field.

At the first blood examination made after the operation no microfilariæ were found, but at the second one, made on February 6, 1925, microfilariæ were discovered.

These two cases of acute lymph scrotum apparently of filarial origin, both presented similar appearances and also resembled each other in that the blockage of the lymph return was only partial and the condition soon subsided. No dilated lymph nodules were observed and the skin was not punctured for outflow of lymph.

Hydrocele.

Simple Hydrocele.

There seems to be little doubt that many cases of hydrocele in the tropics are due to filarial infection. The following is a typical, though not an isolated case:

Case IV.—A male, aged forty-four years, was born in Sydney, New South Wales. He has lived for thirty-four years in North Queensland, chiefly in Cairns and Townsville, and has not been out of Australia. On January 23, 1925, the patient felt ill and consulted one of us (E.H.), chiefly on account of a swelling of the scrotum. He had no previous history of proved filarial infection, but gave a history of periodical attacks of fever and shivers extending over about ten years. These he considered to be influenzal and accordingly did not seek medical advice. On another occasion he suffered with very severe synovitis of the right shoulder. He was an in-patient in the hospital for six weeks on this occasion.

On examination on January 23, 1925, his temperature was 39.4° C. (103° F.). He had double hydrocele, the epididymis on both sides was tender, the testes were apparently normal, no swelling of the cord was present, no lymph stasis was found on either side. The inguinal lymphatic glands were not enlarged. At operation on January 27, 1925, a hydrocele was found on the right side. It contained blood-stained fluid; the epididymis was inflamed, swollen and dark in colour; the testes were apparently normal; no swelling of the cord was found. The usual radical operation for hydrocele was performed. On the left spermatic cord just above the testis, was a dark tumour about the size of a walnut, evidently containing blood. This was removed from the cord and subsequently examined microscopically.

Microfilariæ were found to be present in the blood stream. No parasites were found in the hydrocele fluid. The removed tissue proved to be a mass of fibrous tissue and thrombosed blood vessels. No embedded worms were found in this tissue.

Hydrocele (Double) with Enlarged Left Inguinal Lymphatic Glands.

The following case though not of so recent date as the others, is interesting from the point of view of the end result to be expected after surgical operation.

Case VI.—A male, aged forty-one years, was born at Rockhampton and has spent all his life in Queensland. When at school (at fifteen years of age) the patient was examined by one of us (E.H.) who found he had swollen axillary and inguinal glands. Later the swellings in axillæ and right groin practically subsided and the condition was focused on the left inguinal region, where the glandular swellings became very pronounced (see Figure IV.). Microfilariæ were discovered microscopically at this time.

About twenty years ago the patient had acute synovitis of the left knee joint. After the acute stage had passed, the left leg was splinted in almost full extension, but finally the synovitis cleared up without leaving any marked thickening or limitation of movement. About sixteen years ago the patient had a right hydrocele tapped; this condition had developed some time previously. About fourteen years ago the condition of the patient was as follows:

He had a double hydrocele and very marked enlargement of both the femoral and inguinal lymphatic glands on the

FIGURE IV.
Photograph of patient in Case VI. as he appeared before operation fourteen years ago showing swollen scrotum an enlarged left inguinal and femoral lymphatic glands.

left side only. Radical operation for hydrocele was performed fourteen years ago on both sides. All the glands in the left groin were completely excised. At operation microfilariæ were found to be present in the hydrocele fluid by Dr. Breinl.

An examination was made on February 23, 1925, at 9.30 o'clock p.m.. The patient was a strong active man. No swelling of axillary glands was found. An operation scar was just visible in left groin. No sign of swelling was found in either inguinal or femoral regions. The scrotum and testes were normal. There was no limitation of movement in the left knee joint. The left leg just above the ankle joint was very slightly swollen and became pitted slightly on pressure.

The patient states he has no disability except that he gets this slight swelling just above the left ankle after a hot and tiring day, but after a night's rest it is completely relieved. No microfilariæ were found on blood examination.

Filarial Synovitis.

The old chronic arthritis of the left knee joint of the patient in Case II. is probably an example of a chronic arthritis of the nature of Maitland's cases, while there is even less uncertainty that the acute arthritis of the index finger in Case III. following as it did immediately on an acute filarial attack, was due to the filarial infection. In addition the history of Case VI. suggests that here also we have an example of a synovitis due to the same cause.

Acute Abdominal Crises.

Under the heading of acute abdominal crises it is desired to mention the following case.

Case VII.—A male, aged twenty-one years, was born at Townsville and has lived all his life in North Queensland. He has spent holidays in southern Australia. One brother died suddenly of pneumonia. Recently his sister died suddenly. Microfilariæ have been found present in other members of the family. Three and a half years ago the patient had a severe attack of pain in the back and lower part of the stomach and then became practically unconscious. Microfilariæ were found present in the blood at that time and the patient recovered without operation. Three years ago he had a similar attack. On both these occasions the patient was desperately ill and an operation for an acute abdominal lesion was considered. Two years ago he had a hydrocele which was operated on by one of us (E.H.). At this time microfilariæ were again found in the blood by Dr. Breinl. One year ago he had a fleeting attack of pain in the back and in the left testicle which was slightly swollen.

No filarial attacks have occurred since and no disturbance of bowel action or micturition has been noticed.

On examination on February 12, 1925, the patient had the appearance of a well grown youth and weighed 67.5 kilograms (ten stone ten pounds). He complained of abdominal pain not confined to any particular region and not of a colicky nature. His blood was examined at 9.30 p.m. on February 12, 1925, when microfilariæ were found to be present. On returning home he had very severe abdominal pains, but the attack passed off and he was able to go to work in the morning.

While there is no actual proof that such abdominal crises are due to the presence of microfilariæ, there is a strong probability that such attacks of abdominal pain in filarial patients may be due to some local upset either of a vascular or lymphatic character of filarial origin. In this connexion we have the same symptoms appearing in Case III. reported above, combined in Case VII. with a typical filarial fever and swelling of the scrotum. On this point more reported instances are necessary before any conclusions can be drawn.

In further confirmation of the hypothesis that acute abdominal crises can be produced by filarial infection with *Microfilaria bancrofti*, we have the classic record of the case of Doctors Breinl and Priestley. The case is of sufficient importance to justify excerpts in the actual words of the authors:[4]

> Another case showing an unusual clinical picture due to filariasis came under observation. The patient, a very well-nourished man of about forty-seven years of age, was admitted to the hospital with a diagnosis of "acute abdomen." He was conscious and complained of severe pains in his abdomen. He was obviously very ill, his face was drawn, his tongue dry, his abdomen distended, rigid and tender on palpation. The groin glands of the right side were palpable and the groin, the seat of an extensive doughy swelling, extending about ten centimetres above Poupart's ligament and over the whole of Scarpa's triangle. The pulse was soft, fluttering, about one hundred and sixty beats to the minute, the temperature was subnormal and the extremities cold and clammy.
>
> The examination of the peripheral blood after admission revealed one filarial larva in four drops of blood.
>
> *Post Mortem Examination.*—The abdominal cavity contained about one pint of pinkish chylous fluid containing small flakes of fibrin.
>
> The *post mortem* findings made it probable that the clinical symptoms—acute peritoneal irritation and collapse—were due to the rupture of a lymphatic varix and the effusion of chylous fluid into the peritoneal cavity.

Conclusions.

From Case III. we may draw the conclusions:

1. That surgical operations may help to light up a filarial attack, either general or local.

2. That operations should not be done during a filarial attack unless urgent. The difficulty here, of course, is to decide whether the fever is due to a filarial attack or to the condition requiring surgical operation. A due consideration of the various clinical signs and symptoms must here guide the surgeon.

3. That from the œdematous nature of the tissue near the operation site, the end result may not always be as successful as desired.

From Cases IV., V. and VI. we may conclude:

4. That many cases of hydrocele in the tropics are filarial in origin and that they are not necessarily complicated with lymph scrotum and enlarged inguinal glands, though possibly since the lymph return from the testes and cord is through the abdominal group of glands, those may be enlarged; also that the usual operation for the radical cure of hydrocele in those cases can be performed with a fair promise of a good permanent end result, even when complicated by involvement of inguinal glands.

From Cases II., III. and VI. we may conclude:

5. That in the tropics many patients complaining of rheumatic pains in various tissues and joints, may really be suffering from synovitis or arthritis of filarial origin,

so that in these cases a blood examination for microfilariæ is called for and the ordinary rheumatic treatment may not be attended with great success.

From Case VII. and that of Drs. Breinl and Priestley we conclude:

6. That in all probability some of the apparently acute abdominal crises with pain and vomiting, found in the tropics, are filarial in origin and, if so, will apparently clear up without surgical interference. Indeed in such cases, provided we make sure of our diagnosis and keep a careful watch for any untoward symptoms, surgical interference is not justified.

In conclusion types of cases such as the above, while not very common in northern Australia, have their parallel in other countries more heavily infected with filaria than is Australia. Manson-Bahr during a survey of filariasis and elephantiasis in Fiji reports cases which are very similar in history to the above. Of the morbid conditions found during that investigation he accepts the filarial ætiology for all the conditions mentioned in the preliminary general classification, except with regard to thrombosis of large veins, synovitis and hæmorrhage. Concerning these he writes: "I am not so confident, however, that a filarial ætiology applies to these conditions; the evidence is not so complete, although one is inclined to think that their association with other forms of recognized filarial disease is of too frequent occurrence to be merely a chance coincidence."[5]

Also in his table of classification he lays stress on the fact that in many cases where signs of filarial disease as judged by clinical findings were present, no microfilariæ could be detected either in the blood stream or in the lesion itself and no adult filariæ were found.

The fact that we have here in Australia morbid conditions which according to accepted authorities may be filarial in origin and that in many of these cases, as in the above series, microfilariæ or adult filariæ can be detected, emphasizes the importance of preventive measures in Australia against the vector of this human parasite.

Acknowledgements.

In connexion with the above notes the authors desire to acknowledge thanks to Mr. J. W. Fielding, of the Australian Institute of Tropical Medicine, Townsville, for the preparation of the microscopical sections, to Mr. W. R. Dickenson, of the Pathology School, Melbourne University, for the preparation of photomicrographs of Figures III. and IV., and to Mr. C. M. Nott, of the Commonwealth Health Laboratory, Bendigo, for the preparation of the final plate.

References.

(1) W. Byam and R. G. Archibald: "The Practice of Medicine in the Tropics," Volume III., page 1914.

(2) *Ibidem*, page 1919.

(3) *Ibidem*, page 1937.

(4) A. Breinl and H. Priestley: Collected Papers, Australian Institute of Tropical Medicine, Volume II., Article 28, page 3.

(5) P. H. Manson-Bahr: "Filariasis and Elephantiasis in Fiji," page 60.

Reviews.

THERAPEUTICS.

THE nineteenth edition of Hare's "Textbook of Practical Therapeutics" is to hand. This work is a classic and the current edition fully maintains the highest standard of excellence exhibited by its predecessors. It is divided into four parts: (i.) General Therapeutical Considerations. (ii.) Drugs; arranged unscientifically in alphabetical order. (iii.) Remedial Measures other than Drugs. Foods for the Sick. Feeding the Sick. (iv.) Diseases, followed by an Index of Drugs and Remedial Measures and an Index of Diseases and Remedies.[1] There are some imperfections in the work. For instance, the dose of drugs administered by rectum is stated to be twice that by mouth. Some authorities, on the other hand, state that the rectal dose should be only three-fourths of the oral dose. *Kino eucalypti* is so placed as to make one think that it is a preparation of eucalyptus leaves. The gum of Australian species of *Acacia* has not been found to be a satisfactory substitute for that of *Acacia senegal*. On this point the author is in error. The tartar emetic treatment of bilharzia infections is not mentioned. It is stated that antipyrine in poisonous doses produces methæmoglobin. Pharmacologists generally believe that as it does not form para-amido-phenol, it does not produce methæmoglobin. It is further stated that more than one hundred and fifty grains of barbitone are necessary to cause death. This is surely wrong. In the account of plumbism no mention is made of the part which turpentine is now supposed to play in the production of punctate basophilia and painter's colic, both of which conditions were formerly attributed to lead alone. Further, the author wrongly considers that a blue line on the gums is "the most important confirmatory evidence of chronic lead poisoning." Treatment by colloidal metals is not mentioned. Possibly they possess no special virtues, but, considering their extensive use at the present time, one would have expected some authoritative opinion on the matter in a work of this magnitude. Of indigenous Australian vegetable preparations, mention is made of eucalyptus kino and oil. As a constituent of the latter, eucalyptol is mentioned instead of the more usual term, cineol. Cajuput is briefly mentioned; also jequirity, but surely that barbarous method of treating chronic granular conjunctivitis has passed into oblivion. Duboisine is described, but mention should have been made of the fact that it is not a single alkaloid, but a mixture of alkaloids. The Queensland asthma herb (*Euphorbia pilulifera*) is also dealt with, but the author is wisely cautious as to any opinion of its usefulness.

As regards quinidine, it is stated that: "Cases have been reported in which its use in the presence of fibrillation of the auricles has been followed by headache, faintness, vomiting and even convulsions; sudden death has ensued. It is contraindicated if there be myocardial degeneration." Digitalis is rightly said to be a cardiac stimulant and not a sedative. "High temperatures prevent digitalis from slowing the pulse, because fever depresses the vagus centres in the medulla and also in all probability when the temperature is very high the peripheral ends in the vagus." The virtue of ethylhydrocupreine in pneumococcal infections is extolled. No doubt *in vitro* pneumococci can be destroyed easily by this body, but clinically it has certainly been a failure. Glandular extracts are discussed temperately, but the warning is given: "Some persons have attempted to show that nearly all the organs of the body, be they glands or not, possess these functions until they have reached a *reductio ad absurdum*." "Insulin" is adequately treated and lactic acid bacillus therapy carefully detailed. As regards vaccine therapy the author takes exception to the term as being misleading and prefers "inoculation therapy" or "opsonotherapy." "At the best this plan of treatment is open to many chances of failure and it is also to be borne in mind that if the patient is in a state of very low vitality, because of the existing infection or because of an antecedent illness, he may be damaged by an injection, because the 'negative phase' or period of decreased phagocytic activity may be exaggerated and the 'positive phase' may never occur."

The administration of ether by intratracheal insufflation is briefly descibed. "Acriflavine," it is maintained, does not impair phagocytosis. It is stated that bismuth in syphilis is less active than "Neosalvarsan." Intraspinal injection of "Mercurialized Serum" is advocated in cerebrosyphilis, but it is not considered by the author as efficacious

[1] "A Textbook of Practical Therapeutics: With Especial Reference to the Application of Remedial Measures to Disease and Their Employment upon a Rational Basis," by Hobart Amory Hare, B.Sc., M.D., LL.D. Nineteenth Edition, Enlarged, Thoroughly Revised and Largely Rewritten; 1925. London: Henry Kimpton. Royal 8vo., pp. x. + 1,061, with illustrations. Price: 36s. net.

as "Salvarsanized" serum. Yet the author states that "doubt as to the efficiency of intraspinal injections in cerebro-spinal syphilis seems to be increasing." Elsewhere he states that: "I am about satisfied that any benefit which accrues is largely due to the draining off of the cerebro-spinal and not to the injection of the serum." He also mentions that silver "Arsphenamine" is lacking in popularity and rightly mentions the argyria which may follow it. He states that "Sulpharsphenamine" is a worthy substitute for "Arsphenamine." As regards exophthalmic goître he mentions that iodine was considered to be contraindicated, "whereas we now know that it is most valuable, that it is definitely contraindicated in adenomatous goître with hyperthyroidism and that, when given in exophthalmic goître and then stopped, the patient not only relapses, but becomes worse than before." As regards butyn, extolled as the ideal local anæsthetic, attention is rightly directed to the "very considerable number of cases in which toxic symptoms have arisen." Calcium chloride and lactate find favour by internal administration for various conditions, but "it is not possible to shorten coagulation time by the use of calcium salts (Addis)." The use and dangers of carbon tetrachloride are clearly set out and attention is directed to the fact that oil of chenopodium is distinctly poisonous if too freely used. The following are all explicitly dealt with: Bier's hyperæmic treatment, heat, cold, gavage, lavage, acupuncture, inhalations, leeching, mineral springs, climate, rest, transfusion and a host of other therapeutic measures. It would be superfluous to add further words of commendation for a work which has such world-wide fame.

PROGRESS IN GYNÆCOLOGY AND OBSTETRICS.

THE volume of gynæcology and obstetrics of the Practical Medicine Series is a valuable *résumé* of the literature (mainly American) of 1924.[1] As in previous years Watkins reviews the gynæcological abstracts. The value of endocrinology is stated in more modest terms than the pamphlets of the drug firms would lead one to believe. Although Watkins is an advocate for radium as against X rays and operation in carcinoma, the literature reviewed shows that a moderate view is held regarding its indications. Displacements and prolapse are being treated more by vaginal repair than by the numerous methods of suspension. The work of Schlink on endocervical enucleation and of Worrall on the treatment of uterine tumours provoke appreciative remarks by the editor.

De Lee, assisted by Greenhill, is responsible for the obstetrical review. The non-interfering policy with abortions is steadily gaining ground, especially in septic cases. The Wassermann reaction during pregnancy has been shown to be unreliable and frequently leads to erroneous conclusions. Treatment is not advised on the sole evidence of a reaction in the mother. If the father's serum yields a reaction or if both parents show signs of syphilis then treatment should be undertaken. The battle between the active and conservative schools in eclampsia still rages, though the latter is steadily gaining ground. Blood chemistry has so far been unreliable as a guide to prognosis and treatment. Gwathmey's synergistic method, ethylene oxygen and sacral block anæsthesia have all strong advocates. The use and abuse of forceps and the furore for Cæsarean section come in for some trenchant remarks by the editor. The mania for breech delivery in all cases does not seem to have made much headway during the year. Work on spinal and cranial injuries in the new born amply demonstrate the need for the gentlest manipulations during delivery. The results obtained by adequate ante-natal treatment are the subject of several interesting papers. On the whole the volume shows a steady solid advance in both subjects during the year. The strong personalities of both editors lead to many caustic comments which may act as a deterrent to those tempted to emulate the writers of the papers.

[1] "The Practical Medicine Series Comprising Eight Volumes on the Year's Progress in Medicine and Surgery": Under the General Editorial Charge of Charles L. Mix, A.M., M.D.; Volume V.: Gynecology, Obstetrics; 1924. Chicago: The Year Book Publishers. Crown 8vo., pp. 534, with illustrations. Price: $2 and the series of eight volumes $15.

AROMATICS AND THE SOUL.

"I SING of smells, of scents, perfumes, odours, whiffs and niffs; of aromas, bouquets and fragrances; and also, though temperately and restrainedly I promise you, of effluvia, reeks, fœtors, stenches and—stinks."

Thus commences Dr. Dan McKenzie in his wholly delightful volume: "Aromatics and the Soul," a book between the covers of which no dull or tedious page occurs.[1] The author, who for many years edited the *Journal of Laryngology and Otology* and who recently published "Diseases of the Throat, Nose and Ear"—one of the finest textbooks extant on the subjects dealt with, is certainly an authority on the scientific aspects of olfaction. He has published a very valuable monograph on his researches in this connexion.

In the work before us, however, he enters a wider field and essays to link up the operations of this faculty, both in animals and man, with all the varied relationships and phenomena of life. He elaborates his scheme with a wealth of knowledge coupled with an infinity of charm. The droll tales illustrating the theories discussed, the whimsical inferences arising from his fertile speculations, the gay but delicate handling of the less fragrant subjects of his attention are to the reader a sheer joy. Remarkably well equipped for such a quest, he pursues his investigations with cheerful zeal into a myriad avenues of human associations and interests.

The literary quality of the work is high and the theme never becomes dreary, but is sustained keenly to the last sentence in a manner so lively and jovial that one arrives most reluctantly at the end of a fascinating book!

In an engaging preface the author expresses the hope that the book may never become "a task in any way, for any one at any time," and adds: "If a book is not enjoyable it is already placed upon the only *Index Expurgatorius* that is worth a . . . an anathema."

HANDBOOK ON UROLOGY AND SYPHILIS.

MEDICAL compendia cover such an extensive field of knowledge in such a small space that one can hardly expect to find their perusal entertaining. The appearance of a fourth edition of Hirsch's "Compend of Genito-urinary Diseases and Syphilis" suggests that this particular volume at any rate has a sphere of usefulness to those for whom it is intended.[2]

The author expresses his endeavour to meet the need for a book which epitomizes the mass of matter in standard text-books of urology and syphilis, a need which is felt primarily by medical students studying for their examinations. It is suggested that many practitioners also would welcome a compact book that treats briefly of these diseases.

Two hundred and thirty-five pages cover the field of urinary examination and the various diseases and affections of the component parts of the genito-urinary tract. There is a special chapter on newer aids to diagnosis, the endoscope, pyelography and X rays, cystoscopy, urethral catheterization and ureteral sounding. In addition the subject of treatment both medical and surgical receives due attention.

The remainder of the volume is devoted to an account of chancroid and the various aspects of syphilis.

The work is written clearly and concisely and if somewhat colourless, it has at any rate the compensating feature of giving a large amount of useful information.

[1] "Aromatics and the Soul: A Study of Smells," by Dan McKenzie, M.D. (Glasgow); 1923. London: William Heinemann (Medical Books), Limited; Demy 8vo., pp. 174. Price: 7s. 6d. net.

[2] "A Compend of Genito-Urinary Diseases and Syphilis," by Charles S. Hirsch, M.D., Fourth Edition, Revised. 1925. Philadelphia: P. Blakiston's Son & Company. Crown 8vo., pp. xvi. + 337.

The Medical Journal of Australia

SATURDAY, AUGUST 8, 1925.

A Health Officer for the Greater Brisbane Council.

With the crowding of enormous numbers of the population into the confined space of a modern city the problem of the preservation of the public health becomes more acute. Australia is a young country, but its cities are growing rapidly. The tendency more particularly for the younger generation to leave the open spaces and flock to the larger centres is becoming more and more pronounced. It is true that owing to its youth, its climatic conditions and for many other reasons the cities in Australia are not faced with health problems of the same magnitude as those which confront the authorities in the old world, where centuries of tradition, poverty and all that follows in its train combine to render progress more difficult. At the same time there is very much to be done in Australia for the public weal, uniformity is lacking, many anomalies exist and those in political power are either woefully ignorant on health matters or through indolence have lulled their conscience to permanent rest.

In the capital city of Queensland the Greater Brisbane Council has come into being and with it has arisen the necessity for the appointment of an officer of health to the Council. The City of Brisbane presents its own peculiar health problems. It is the capital of a State approximately one-half of which lies within the tropics. Its proximity to the East and to the mandated territories in the Pacific renders it liable to attack from such diseases as plague, malaria and dengue fever. Outbreaks of plague have more than once originated within its boundaries and the insect vectors of malaria, yellow fever and dengue fever are found in its environs. Filaria is also endemic in Queensland and is commonly seen in Brisbane. In connexion with the appointment of a health officer to the Greater Brisbane Council it has been suggested in all seriousness that a layman and not a medical practitioner should be chosen for the position. Dr. Val McDowall, the President of the Queensland Branch of the British Medical Association, acting on behalf of the Council of the Branch, and the Royal Commission on Health have already entered strong protests against the suggestion. To our minds the proposal is so preposterous that it should be unnecessary to point out its inevitable failure.

The qualifications necessary in the appointee to such a position are of no mean order. In the first place an individual in charge of the health of such a number of citizens should have a profound knowledge of preventive medicine. It is necessary that he should have devoted some time to special study of the subject. He should undoubtedly hold a diploma in public health of some recognized institution, not that the diploma *per se* is any guarantee of his knowledge, but as indicative of special study already undertaken. Preventive medicine is possibly the most progressive of all the branches of medical science and undoubtedly the most important. The head of a health department should be a student and an investigator, otherwise he will not discover defects in health regulations nor will he foresee necessary legislation. He will become as lethargic as his political superiors. The second attribute required by the appointee is administrative ability. Much has been made of this in discussion on the subject and it is exceedingly important. That some medical practitioners have failed as administrators is no argument. Failures are found in every walk of life. Medical practitioners can administer and control large undertakings with great success. The recent war proved this. In civilian life too the many successful medical superintendents of large institutions and of departments bear evidence to the truth of this statement. Thirdly it is essential that the head of such a department should be so erudite and human an individual that he will gain the confidence and receive the cooperation of the practising members of the medical profession. These qualities obviously cannot be found in any layman, however efficient he may be. It has been held that a lay administrator could obtain advice from a medical expert when he needed it. It is obvious, however, that a layman

would not have the knowledge or experience to allow him to determine whether the advice he receives is good or not and it is not likely that he would always seek advice when it is necessary or follow it blindly when it is given to him. More than this there would be no one, except the Council, to compel him to accept sound medical advice unless he wishes to do so. Furthermore, the Federal Committee of the British Medical Association in Australia, the Royal Commission on Health and the Federal Department of Health have laid stress on the necessity for cooperation between the general practitioner and the health authorities. This cooperation will be effected largely by the coordination of agencies and the utilization of information obtained by the health authorities from the practising members of the medical profession. It is inconceivable that a layman would know what information to seek and very unlikely that medical practitioners would lend their aid to such a new departure by cooperating with a non-medical head of a department. It cannot for one moment be doubted that if applications from medical practitioners are called for in the right quarter and a suitable remuneration is offered, the right man will be forthcoming.

Apart from all these considerations we have yet to learn of any reasonable person who would advocate the appointment of a business man as attorney-general or of a clergyman as manager of a coal mine.

Current Comment.

VERTIGO.

In a very interesting and ingenious paper contributed to the first session of the Australasian Medical Congress (British Medical Association) Professor A. E. Mills endeavoured to prove that vertigo is produced when the nerve structures of the vestibule are in a hypersensitive state and are subjected to stimuli. He assumed that only excessive or repeated stimuli induce the sensation of vertigo when the vestibular nerve mechanism is normal and further that the pathological hypersensibility associated with vertigo is the result of anoxæmia or the toxic effects of the products of bacteria or septic processes. That both vertigo and tinnitus can be caused by chemical stimulation of the vestibular apparatus is certain. Professor Mills recited the details of attacks of true vertigo produced by tobacco. Similarly there is no doubt concerning the possibility of an attack of vertigo being elicited as a result of the absorption of the products of septic infections. It is true that the chemistry of these products is not known. The chemical irritant, whatever it may be, in itself is probably insufficient to produce the disturbance of the equilibrium and the sensation of giddiness, for septic infections are very common and vertigo is relatively uncommon. Similarly tobacco and other known chemical stimuli of the vestibular mechanism are only exciting causes of vertigo, for the number of people who smoke tobacco all day long and who do not suffer from vertigo, is legion. It is, therefore, probable that the vestibular nerve mechanism is, as Professor Mills has suggested, in a state of abnormal sensitiveness in those prone to vertigo. The evidence, however, of an associated anoxæmia does not appear to be convincing either from a clinical or from a physiological point of view.

Several years ago Mr. Richard Lake endeavoured to define two classes of aural vertigo. The one, he held, was due to an increase in blood pressure and the other to a diminished blood pressure. During the past twelve years he has employed better technique and has obtained the skilled assistance of physicians versed in the accurate measurement of blood pressure. He is now convinced that he was in error when he assumed that the majority of attacks of vertigo were due to increased blood pressure.[1] He admits that the blood pressure may be high in association with vertigo, but he is persuaded on sure grounds that this is rare and that the association is not one of cause and effect. In his opinion vertigo as contrasted with tinnitus is more frequently due to central irritation, save when it is caused by a suppurative disease of the middle ear. That it is usually associated with a low blood pressure would exclude the anoxæmia hypothesis. Mr. Lake has found as the result of a large experience that when persons with diminished blood pressure smoke to excess, vertigo is likely to manifest itself. The vertigo disappears when the smoking is discontinued, but reappears when it is resumed. In other forms the vertigo can be combated if the blood pressure can be raised by artificial means. Moreover he instances cases in which vertigo occurred in persons whose raised blood pressure was reduced. He has found that in certain types of vertigo, when the avoidance of violent nose blowing and the cessation of tobacco smoking fails to bring about relief, admirable results can be obtained by drugs like adrenalin, which reduce blood pressure. He refers to the occurrence of vertigo associated with high blood pressure caused by pyorrhœa, but maintains that such a combination is very rare. If Mr. Lake's experience can be accepted and there is every reason to assume that it can, the postulation of a cerebral anæmia must be relinquished. It would appear to be safer teaching to assume that the cause of the increased irritability of the nervous elements is unknown; the attack of vertigo results when certain chemical stimuli reach this hypersensitive apparatus.

[1] *The Lancet*, May 30, 1925.

BLOOD SUGAR AND "INSULIN."

A GREAT deal of information has been accumulated during the past few years concerning the metabolism of carbohydrates. While the state of knowledge remains as it is at present, it is necessary in practice to recognize that the damage inflicted on the function of islet cells of the pancreas of the patient with diabetes cannot be influenced. The disease at the stage of glycosuria depends on the failure of the metabolism of carbohydrate. A clear conception of the essential nature of the disturbance can only be obtained if the normal process of carbohydrate metabolism is understood. It has been known for some years that when a person in health takes sugar or other form of carbohydrate, the concentration of the sugar in the blood increases. After about three or four hours the concentration is again at the level spoken of as the fasting level. If a second dose be given before the fasting level has been reached, the increase in the sugar concentration is less than after the first dose. In other words there is no step ladder accumulation of sugar in the blood. MacLean and de Wesselow have suggested that the first increase of sugar in the blood sets the glycogen forming mechanism in action and thus for a period of from three or four hours the accumulation of sugar in the blood is inhibited.

In order that the effect of repeated doses of carbohydrate taken in regular meals may be followed both in normal and in diabetic persons, Dr. Leon Jonas, Dr. T. Grier Miller and Dr. Ida Teller have carried out some careful experiments.[1] They recorded the hourly variations of the blood sugar curves of normal persons. The highest point was reached one hour after breakfast in three out of six persons, after supper in two and after lunch in one. The amount of carbohydrate taken by four of the six persons was approximately the same at each meal. It is obvious from the curves that the highest point was not governed by the amount of carbohydrate. In the next place they made their observations on persons with mild diabetes. The amount of carbohydrate was limited in the diet of these persons. The fasting levels varied between 0.147% and 0.100%. In two patients the highest point was reached soon after breakfast. These patients were taking the same amount of carbohydrate in each of the three meals and their total diet was adequate.

The third group of estimations concerned patients with severe diabetes who had not received any "Insulin." Two patients had a fasting level of 0.288% and 0.300% respectively. The highest point in each curve was after breakfast, but there was a second high point after supper. A smaller rise followed lunch in one patient whose carbohydrate at this meal was thirty-five grammes; no after lunch rise occurred in the other patient, but the carbohydrate at the meal was reduced to twenty grammes.

Ten units of "Insulin" were given one half of an hour before each meal to three patients with mild diabetes. The dose before breakfast had the effect of reducing the blood sugar concentration during the interval up to the meal. The carbohydrate of the breakfast, however, neutralized this reduction. In two patients there was a definite rise in the concentration within one to two hours of each meal. The result of a single dose of "Insulin" was a rise after breakfast, but none after lunch, even when only ten units were injected. This suggested the advisability of adding an evening dose of ten units to a morning dose of twenty. The effect of this was to slow down the rise in the evening, but not to prevent it. When the morning dose was timed thirty minutes before breakfast, there was an immediate fall in the concentration and a rise corresponding to the carbohydrate of the meal. The concentration did not reach the fasting level.

The authors have attempted to control the blood sugar concentration in patients with severe diabetes. They found that when the greater part of the carbohydrate was given with breakfast and "Insulin" was injected immediately before the meal in doses of thiry-five or forty units, the concentration fell steadily until after supper. The second rise did not reach the fasting level of the individual patient. At times a short rise in the curve followed breakfast time. For this reason the dose was given thirty minutes before the meal, but this was not always successful. The authors hold that by giving the morning dose thirty minutes before breakfast the rise after the meal is often avoided. A small preliminary dose of glucose with the dose of "Insulin" was found to be useless in starting the glucose disposal more promptly. When a second dose of "Insulin" was given in the evening it was found to prevent a great rise after supper, but it proved powerless to check the rise during the night. For patients whose blood sugar concentration could not be controlled satisfactorily with two doses, the midnight third dose had the effect of preventing a heavy rise during the night and early morning. The authors have come to the conclusion from their experiments that the doses of "Insulin" must be determined by the estimations of the blood sugar concentration both before and after meals. They point out that the urine voided within two hours of breakfast will usually contain the maximum amount of sugar.

From these observations it would seem that MacLean and de Wesselow's hypothesis concerning the effect of carbohydrates in initiating the glycogen forming mechanism is probably correct. The rapid exhaustion of this mechanism should be borne in mind when a patient is being treated for diabetes. In the severe forms of the disease it is essential to exercise care in timing the doses of "Insulin" and in giving glucose, for the reactionary mechanism may depress the blood sugar concentration during the course of the day to a danger level. Further it would appear that the reaction follows more effectively if the carbohydrate is given thirty minutes after the "Insulin" and not at the same time. Above all the safe management of the diabetic patient must be based on repeated estimations of the blood sugar concentration.

[1] *Archives of Internal Medicine*, March 15, 1925.

Abstracts from Current Medical Literature.

MEDICINE.

Generalized Œdema Immediately Following "Insulin" Control in Diabetes Mellitus.

R. B. Gibson and R. N. Larimer (*The Journal of the American Medical Association*, February 14, 1925) report five cases of generalized œdema following the production of a sugar-free urine by "Insulin" therapy. Hitherto unreported in America, the circumstance has been noted by many observers in German clinics where "Insulin" preparations seem to induce water retention through the less complete removal of their proteins. Three correlated hypotheses are given in explanation of the occurrence of the œdema: (i.) The œdema arises because of the dehydration of the tissues induced by the polyuria which provokes a compensatory affinity of the tissues for water; as a result of this sodium salts which are ineffective in the healthy person, produce œdema in the diabetic patient. (ii.) A supposed anergic effect of "Insulin" preparations and due to the non-"Insulin" constituents. (iii.) An absence of diuresis once "Insulin" treatment has been sufficient to lower the glucose content of the blood. In the authors' cases the œdema was banished by the administration of potassium salts (potassium bicarbonate and potassium chloride in doses of 0.65 gramme with each meal). This treatment is the result of the research of von Bunge who showed long ago that the administration of these salts leads to increased elimination of sodium in the urine. Falta has proved that œdema may be induced by sodium bicarbonate even with a diet low in sodium chloride and that potassium bicarbonate will disperse it. Other writers have noted the diuresis produced by potassium and calcium salts in the dropsy of chronic renal disease and in cases complicated by the presence of ascites and œdema.

Oral Administration of Glucose.

T. I. Bennett and E. C. Dodds (*The Lancet*, February 25, 1925) have investigated the action of glucose administered orally in large quantities. Commercial glucose (or "Glucose B.P.") was used in the experiments, a 4% solution was prepared and was flavoured with lemon juice. Glucose as ordinarily used in a mixture of dextro-rotatory sugars and contains minute traces of arsenic. This impurity, now hardly discoverable by analysis, was formerly present in much greater quantity in commercial glucose; jams containing glucose are known to have caused severe outbreaks of arsenical poisoning. That this danger is past is due to the fact that glucose is now made by the hydrolysis of Indian corn with hydrochloric acid and not as formerly with sulphuric acid which is commonly contaminated with arsenic. Bennett and Dodds found that glucose has considerable food value; they estimated that 0.45 kilogram (one pound) of glucose yields 1,000 large calories. Contrary to popular medical belief very large quantities of glucose (as much as five hundred grammes) may be taken orally without the production of glycosuria. Blood-sugar estimations showed that no hyperglycæmia occurred in normal subjects and that after the first hour the blood-sugar reading was no higher than during periods of fasting. The normal respiratory exchange, too, was unaffected by the ingestion of glucose. Ingestion of five hundred grammes of the sugar causes a transient diuresis. In two of the cases observed a remarkable hypnotic effect was produced, lasting two or three hours. Given in large quantity the glucose seems to be detained and diluted in the stomach, but without any interference with appetite. In view of the facts that glucose is palatable (being much less sweet than cane sugar), that it is absorbed without evoking great activity of the digestive glands and that it readily counteracts acidosis the authors recommend its use in conditions such as the acute infections and in cases of malnutrition. They have found that glucose is a valuable addition to the dietary in pulmonary tuberculosis. The fate of the ingested sugar seems at present to be obscure, but the only limit to the normal man's capacity for taking it would appear to be that imposed by his appetite.

Meningitis Following Lumbar Puncture.

C. P. Symonds (*The Lancet*, February 28, 1925) reports the occurrence of meningitis in a patient on whom lumbar puncture had been performed for diagnostic purposes. The case was that of a man of forty-two, known to have had a venereal infection and thought to be suffering from *mesencephalitis syphilitica*. The operation was done with the usual aseptic precautions, but there were doubts as to the sharpness of the needle-point. Three days after the puncture the patient was admitted to hospital with symptoms of meningitis. He passed gradually to a state of muttering delirium with absent tendon reflexes and incontinence of fæces and urine. The temperature at this stage reached 40.7° C. (105.4° F.). Symonds was unable to aspirate thick purulent fluid by lumbar puncture. Leaving the lumbar needle *in situ*, he then performed cistern puncture and was thus able to irrigate the subarachnoid space from below with fifty cubic centimetres of normal saline solution. The result was an immediate improvement in the patient's condition and a fall in his temperature which did not subsequently rise above 38.5° C. (101° F.). The tendon reflexes and control of the sphincters slowly returned; in three months the patient walked without help and undertook a sea voyage. The pus obtained by lumbar puncture yielded a growth of *Staphylococcus aureus* on culture. Symonds points out the remote though unavoidable risk of sepsis that attends all surgical procedure. In the case of lumbar puncture the deeper layers of the skin, he says, cannot be sterilized, but the needle used must be sharp and the stylet bevelled flush with the needle-point.

Thrombo-Angiitis Obliterans.

Louis H. Sigler (*Annals of Clinical Medicine*, January, 1925) discusses the subject of *thrombo-angiitis obliterans*. This is a chronic and progressive disease marked by thrombotic occlusion of the vessels of any of the extremities, productive of circulatory blocking and of great pain and resulting in ulceration or gangrene, loss of function and often in loss of the limb. The struggling and dirty Jews of the great cities are the commonest sufferers, particularly the male cigarette-smokers between the ages of twenty and forty years. Neither the eating of rye bread nor the incidence of typhus has any bearing on the disease. From the blood of several patients Rabinowitz has isolated a bacillus which fulfils Koch's postulates and which is undoubtedly the causative organism of the disease. Sufferers are predisposed to this disease by cold, trauma and the excessive use of tobacco. Migrating thrombi are present in the deep arteries and veins of the affected limb and the thrombosis leads later to round-cell infiltration and the growth of dense cords of connective tissue in the vessels and all perivascular structures. The distal portions of the blood vessels suffer first, but the process travels upwards by fits and starts to involve the higher sections. Abscess formation is common at the periphery of recent thrombi. As to the blood, there may be an erythrocytosis, a shortened coagulation time and a raised blood sugar curve, findings which suggest a diminution in the total blood volume and partly account for the fact that the blood pressure in the disease is always low. The presence of the thrombi results in local anæmia at first. A passive hyperæmia soon ensues and the part assumes a cyanotic tint with scattered areas of discoloration due to diapedesis. The initial symptoms are pains and feelings of numbness and fatigue in the affected extremity. Ulcers, fissures and impaired nail growth are the marks of serious trophic disturbance. Arterial pulsations cannot be detected over the lines of the important arteries of the limb. Months and years may elapse before gangrene appears. The pain, boring or tearing in nature, then becomes unendurable. Morphine does

not relieve it and suicide is often attempted at this stage. The diagnosis rests upon the recognition of grave vascular blocking in young persons free from arterio-sclerosis and syphilis. The remissions and exacerbations, the pains, the blood findings and the pulseless arteries are all parts of a characteristic picture. Of the many methods of treatment some, such as the operation of arterio-venous anastomosis performed on the femoral artery and vein, are not only useless, but highly dangerous. The injection with alcohol of nerve trunks may relieve pain, but sometimes introduces a secondary infection. Bier's hyperæmic suction is sometimes useful in selected cases. Sigler's greatest successes have been achieved by the adoption of the Kogo treatment of duodenal flushing. A Rehfuss tube is introduced into the duodenum and allowed to remain there for a period of three or four weeks. Through the tube from seven to fourteen litres of Ringer's solution, saline solution or plain water are given each day. Dry heat, massage and large doses of potassium iodide are useful accessories in treatment. Tobacco smoking must be strictly interdicted.

Scarlet Fever.

KONRAD E. BIRKHAUG (*Bulletin of Johns Hopkins Hospital*, February, 1925) records his experiences whilst treating patients suffering from scarlet fever with convalescent scarlet fever serum and Dochez's antistreptococcic serum. The fact that one attack of scarlet fever generally produces an individual immunity led Weisbecker in 1897 to inject the serum of convalescent patients into the tissues of severely infected persons. Weisbecker's results were disappointing, but later investigators, using much larger dosages (thirty to one hundred cubic centimetres) at an earlier stage in the disease were able to announce a measure of success. Marmorek in 1895 endeavoured to immunize animals with polyvalent strains of hæmolytic streptococci which he had isolated from the throats of scarlet fever patients, but his clinical results, like Weisbecker's, were inconclusive. It is known that neither culturally nor morphologically does the *Streptococcus hæmolyticus* of scarlet fever differ from that of tonsillitis or of other septic conditions. Dochez has shown, however, that the streptococcus in the throat of scarlet fever patients is agglutinated by the sera of animals immunized against streptococci obtained from patients with scarlet fever, but not by the sera of animals immunized against other strains of streptococci. He has also successfully immunized a horse with streptococci of the hæmolytic type, obtaining a serum with power to blanch the rash of scarlet fever when injected intramuscularly. In a series of thirty-seven cases Birkhaug finds that the serum of convalescents when injected into the muscles of scarlet fever patients, causes a rapid improvement in the general symptoms. The rash is usually unaffected and the usual complications are not reduced in incidence. Birkhaug has also treated a series of thirty-one patients with Dochez's serum, injecting forty cubic centimetres intramuscularly during the first three days of the disease. This treatment has resulted in a rapid disappearance of the toxæmia, a fall in the temperature and pulse rate in every case, a lowered leucocyte count and a subsidence of the cervical adenitis. In a moderately severe case a dose of forty cubic centimetres of the serum is sufficient to effect a cure, while the septic complications yield at a slower and more irregular rate.

Treatment of General Paralysis by Inoculation with Malaria.

H. A. BUNKER, JUNIOR, AND G. H. KIRBY (*The Journal of the American Medical Association*, February 21, 1925) publish a statement of their experiences in the treatment of general paralysis by inoculation with malaria. Their work rests upon the observation of von Jauregg that patients with general paralysis are not infrequently benefited by the supervention of some acute illness, a condition of affairs which this investigator sought first to imitate by the use of Koch's old tuberculin and of antityphoid vaccine and later by the inoculation of general paralytics with blood from a patient with tertian malaria. In 1917 nine general paralytics were so inoculated by von Jauregg; four years after the conclusion of their treatment three of these patients were still in active work. The figures of other workers in this field show that of the patients inoculated with malaria between 31% and 38% enjoy more or less complete remissions from the symptoms of general paralysis. The treatment is admittedly empirical. It may be that the inoculation is productive of antibodies inimical to the spirochæte or that the latter may be killed merely by the pyrexia of malaria. A parallel fact of great interest is, however, that Peruvian natives suffering from uta —a leishmaniasis of skin and mucous membranes—have been wont since ancient times to visit malarious districts, where their lesions are said to undergo cure after a number of attacks of fever. The authors inoculated fifty-three patients, all of whom were suffering from definite psychoses and required treatment in mental hospitals. After observation and lumbar puncture the patients were given an intravenous injection of one to one and a half cubic centimetres of blood from a patient already under treatment; it was considered unnecessary to take the blood from the donor during a malarial rigor. The intravenous method was used exclusively, as being more certain in its results than the subcutaneous method of certain European workers. Each patient was allowed to have from eight to twelve attacks of fever, after which a routine dose of quinine sulphate was given three times a day. The course run by "inoculation malaria" is atypical; the attacks most usually are diurnal, but three or four days may elapse between them. With successive passages of the infection from host to host, it was found that the attacks tended to become more regular, while the plasmodium appeared to develope increased virulence as gauged by temperature records. Complications were unimportant. *Herpes labialis* was common, as was mild jaundice. All patients became definitely anæmic and most of them lost weight, but recovery from these complications took place rapidly. As to clinical results, the writers consider four weeks to be the minimum period during which improvement can become manifest; mental improvement may not reach its full height for two or three months. Of the fifty-three patients, eleven have been discharged too recently to furnish safe evidence. Six patients died during treatment, three as the result of convulsions. Fourteen patients were considered unimproved, eighteen were greatly improved and fourteen have resumed their former occupations. Unquestionably, therefore, the writers consider this method of treatment to be of value.

Appendicitis.

A. R. SHORT (*The Lancet*, January 31, 1925) discusses the causation, diagnosis and treatment of appendicitis. He alludes to the increased frequency of appendicitis in the last thirty years. He considers there has been an actual and not merely an apparent increase. It is suggested that decreased consumption of cellulose containing foods (vegetables) may be a factor in causing this increase. Difficulty in diagnosis may arise when the appendix is in the pelvis or too high or retrocaecal. Appendicitis with diarrhœa gives rise to error. The important facts are pain as the first symptom, vomiting, fever and tenderness and resistance in the right iliac fossa. There are many conditions which may simulate appendicitis, pneumonia being one which should especially be remembered. Chronic appendicitis is a less common condition than statistics would indicate and it is advisable to seek for a history of an acute attack before condemning the appendix. In true chronic appendicitis there are usually periods of pain and periods of freedom from pain. Mobile caecum and visceroptosis are common causes of persistent pain in the right iliac fossa. A diagnosis of latent appendicitis is indicated in those cases in which children complain of irregular attacks of fever, vomiting and abdominal pain with no localization to the right iliac fossa, in patients with symptoms suggesting gastric or duodenal ulcer and in cases in which profuse hæmatemesis occurs with or without dyspeptic symptoms.

British Medical Association News.

ANNUAL MEETING.

The Annual Meeting of the South Australian Branch of the British Medical Association was held on June 26, 1925, Dr. F. Steele Scott, the President, in the chair.

Annual Report of the Council.

The Honorary Secretary presented the annual report of the Council for the year ended June 30, 1925, which was taken as read and adopted. It had been circulated among the members of the Branch.

Report of the Council for the Year Ending June 30, 1925.

Membership.

The membership of the Branch now stands at 350, being a net increase of twenty-seven for the past year. The names of two members had to be removed from the list on account of non-payment of their 1923 subscriptions. It is with regret that the deaths are recorded of Dr. M. Birk and Dr. R. E. Harold.

Meetings.

Eight ordinary meetings and one special general meeting were held during the year and the Council met for business on twelve occasions. The Lodge and Ethical Committee has had a busy time, having met eight times. The monthly scientific meetings have been well attended and many and varied subjects dealt with. The attendances at Council meetings were as follow: Dr. Scott twelve meetings, Dr. de Crespigny nine meetings, Dr. Newland ten meetings, Dr. Smeaton ten meetings, Dr. Verco eleven meetings, Dr. Ray ten meetings, Dr. Riddell five meetings, Dr. Cherry ten meetings, Dr. Erichsen eleven meetings, Dr. Beare ten meetings, Dr. Brownell twelve meetings, Dr. B. Swift eight meetings.

Annual Dinner.

The annual dinner was held last year at the Grand Central Hotel, a large number of members attending. This year it will be held on Friday, June 26, at 7.15 p.m., at the "Piccadilly," Liberal Club Building, North Terrace, and already a large number of members have signified their intention of attending. Will those who wish to be present and have not already signified please return to the Secretary the butt of the ticket as soon as possible, so that the catering arrangements can be finalized?

Representation on Boards.

Dr. H. S. Newland and Dr. B. Smeaton were reelected members of the Dental Board of South Australia as representatives of the Association.

Federal Committee.

Dr. H. S. Newland and Dr. B. Smeaton continue to represent the Branch on the Federal Committee and both attended the two meetings held in Sydney and Melbourne respectively.

Royal Commission on National Health.

Dr. F. S. Hone represented this State on the Royal Commission which was appointed to take evidence on national health in all the States.

Listerian Oration.

This year the Council invited Dr. W. J. Penfold, Director of the Commonwealth Serum Laboratories, Melbourne, to deliver the Listerian Oration, seventy-eight members being present. Dr. Penfold took for his subject "Australian Pneumococci, with Reflections on Laboratory Medicine" and the Council desires to thank him officially for his interesting address.

Lodge Matters.

Arising out of complaints received from lodge surgeons that some of their lodge secretaries constantly showed laxity in their duties as defined in the Model Lodge Agreement, a special general meeting was held in March to discuss the whole subject and as a result the Council has decided to lay the particular matters before the executive of the Friendly Societies' Association to have them remedied. It is hoped that a real benefit will result to lodge surgeons in consequence.

Transfer of British Medical Association Headquarters in London.

After next month the new home of the Association will be at Tavistock Square, London, and Dr. James Riddell, who is at present in England, will attend the function as our representative and also the Annual Meeting to be held at Bath in July.

F. Steele Scott, President.

Financial Statements.

Dr. W. A. Verco, the Honorary Treasurer, presented the financial statements for the year ended December 31, 1924. He commented on the satisfactory financial position. On the last day of the year there was a surplus of £288 to be added to the general fund.

Dr. A. A. Lendon expressed the opinion that in view of the substantial surplus of income over expenditure, the subscription of members might be reduced.

Dr. Verco stated that as the Council had recently resolved gradually to acquire the British Medical Hall, it had determined to leave the rate of subscription of members unaltered for the present.

The financial statements were adopted.

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED DECEMBER 31, 1924.

Expenditure.

	£	s.	d.
To British Medical Association, London—Subscriptions Account	404	16	3
„ The Medical Journal of Australia—Payment for Journals	310	15	0
„ Lister Medals	8	10	10
„ Hire of Hall	24	3	0
„ Depreciation of Plant	12	0	0
„ General Expenses	11	18	9
„ Postages and Telegrams	30	5	3
„ Stationery and Printing	30	8	7
„ Audit Fees	4	4	0
„ Duty Stamps and Telephone	8	14	4
„ Federal Committee—Capitation Grant	32	0	0
„ Listerian Oration Expenses	20	0	0
„ Salary (Secretary)	150	0	0
„ Balance (being Excess of Income over Expenditure) transferred to General Fund Account	288	0	7
	£1,335	16	7

Income.

	£	s.	d.
By Subscriptions received	1,219	6	0
„ Subscriptions due and unpaid	42	3	0
„ Interest and Dividend	71	0	0
„ Exchange	3	7	7
	£1,335	16	7

GENERAL FUND ACCOUNT.

	£ s. d.		£ s. d.
To Transfer to Library Fund Account (184½ City members' subscriptions at 10s.) ..	92 5 0	By Balance at December 31, 1923	1,038 0 7
		„ Income and Expenditure Account (transfer of surplus for year)	288 0 7
			£1,326 1 2
„ Balance carried down	1,233 16 2		
	£1,326 1 2	By Balance brought down	£1,233 16 2

LIBRARY FUND ACCOUNT.

	£ s. d.		£ s. d.
To University Library Grant paid	50 0 0	By Balance at December 12, 1923	171 18 6
„ Balance carried down	218 0 0	„ Savings Bank Interest	3 16 6
		„ Transfer from General Fund Account (being 184½ City members' subscriptions at 10s.)	92 5 0
			£268 0 0
	£268 0 0	By Balance brought down	£218 0 0

BALANCE SHEET AS AT DECEMBER 31, 1924.

Liabilities.	£ s. d.	Assets.	£ s. d.	£ s. d.
British Medical Association, London	36 6 9	Plant Account	119 18 4	
The Medical Journal of Australia	24 10 0	Less written off (10%)	12 0 0	
Sundry Creditors	47 13 9			107 18 4
Subscriptions Paid in Advance	11 15 0	Delineascope Account (Library Fund)		55 2 10
Library Fund Account	218 0 0	Commonwealth Loan, 6% 1930 (Face value, £700), cost		691 3 6
General Fund Account	1,233 16 2	Commonwealth Loan, 5% 1948 (Face value, £400), cost		403 12 0
		Lister Medals and Dies on hand		23 14 2
		Savings Bank of South Australia (Library Fund Account) at Credit		120 12 2
		Subscriptions owing		42 3 0
		Cash in hand—		
		General	£22 17 0	
		Petty	3 9 9	
				26 6 9
		National Bank of Australasia, Ltd.—		
		Amount at Credit		101 8 11
	£1,572 1 8			£1,572 1 8

Audited and found correct with Books and Vouchers produced.

C. W. L. Muecke, F.I.C.A.,
Auditor.

Adelaide, February 10, 1925.

W. A. Verco, Honorary Treasurer,
R. G. C. Hodge, Secretary.

Election of Office Bearers.

The President announced the result of the election of office bearers for the ensuing year as follows:

President: Dr. C. T. C. de Crespigny (unopposed).

Vice-President: Dr. H. H. E. Russell.

Honorary Treasurer: Dr. W. A. Verco (unopposed).

Medical Secretary: Dr. F. N. le Messurier (unopposed).

Members of Council (three vacancies): Dr. F. St. J. Poole, Dr. F. J. Douglas and Dr. E. A. Brummitt (unopposed).

Members of the Library Committee: Dr. H. Swift, Dr. A. A. Lendon, Dr. H. S. Newland, Dr. W. Ray and the Medical Secretary.

Delegates on the Federal Committee: Dr. H. S. Newland and Dr. Bronte Smeaton.

President's Address.

Dr. F. Steele Scott read his address (see page 153).

Dr. A. A. Lendon moved a vote of thanks to the retiring President and to the retiring members of the Council for their past services.

The motion was seconded by Dr. Bronte Smeaton and was carried by acclamation.

Dr. Steele Scott replied.

Induction of President.

Dr. Steele Scott asked the newly elected President to take the chair and expressed a wish that his year of office might be a happy one.

Dr. C. T. C. de Crespigny thanked the members for his elevation to the high position of President of the Branch. He assured them that he would do his best to uphold the dignity of the office in a worthy manner.

SCIENTIFIC.

A MEETING OF THE QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the B.M.A. Building, Adelaide Street, Brisbane, on June 5, 1925, DR. VAL MCDOWALL, the President, in the chair.

Welcome to Colonel Barber.

THE PRESIDENT extended a welcome to Colonel G. W. Barber, C.B., C.M.G., D.S.O., V.D., *Croix de Guerre*, the new Director General of Medical Services.

Conditions of the Prostate.

DR. A. S. ROE read a paper entitled: "Conditions of the Prostate not Including the Malignant and Venereal" (see page 155).

DR. J. A. CAMERON considered that the characteristic symptom in prostatic condition was difficulty and not frequency of micturition—difficulty all through the act. He thought the punch operation was an unsatisfactory and non-surgical procedure. Were there many recurrences of symptoms and contraction following it? Was it possible to diagnose prostatic calculi before operation when they were embedded in the gland? He thought that Harris relied on the indigo-carmine test alone and did not operate if no good reaction occurred. He asked Dr. Roe to explain how he dealt with patients after the first tube was removed and a smaller one inserted.

DR. L. M. MCKILLOP referred to cystoscopy of the bladder in the presence of multiple strictures. In one instance he had been forced to do perineal section and examine the bladder through the opening. When the prostatic enlargement was not excessive, the symptoms were due to the interureteral bar. Distortion of the trigone caused too frequent micturition, pain and inability to complete the act.

DR. G. P. DIXON asked what Dr. Roe did for obstruction due to irregular cicatrization after operation. He had found a definite bar of mucous membrane in one patient. He did not consider the phenol-phthalein test had any advantages over the indigo-carmine. The clinical examination was better than all these chemical tests.

DR. E. S. MEYERS would have liked more detail of the examination of the lateral lobes with the cystoscope. He also would like to know the condition of the ureters. He asked what was the greatest length of time before catheterization was necessary in patients not submitted to operation. Nearly all patients after operation had dirty urine and it was hard to say whether it was renal or vesical in origin. He did not consider that the question of the acidity of the urine was important.

DR. M. GRAHAM SUTTON regarded the urea test quoted by Dr. Roe as being somewhat fallacious. Surely many of the patients could not completely empty their bladder without the aid of a catheter. Indigo-carmine was best administered intravenously and by this means one factor of error occurring with the subcutaneous method, namely absorption into the local tissues, was eliminated.

DR. D. A. CAMERON considered that patients should be operated upon much earlier than was usual. If obstruction was present, early operation should be advised. He had a patient who had been catheterized for fifteen years without definite bladder infection. He relied more on the clinical condition of the patient than on chemical tests. It was less risky to operate on private patients than on those of the hospital class and the results obtained were better. He had had trouble occasionally with patients not passing urine naturally after operation, thirteen weeks was the longest duration. He used a suction apparatus to keep the wound dry. Too much suction would cause hæmorrhage. Latterly he had used the Hamilton Irving apparatus and found it very satisfactory.

DR. D. E. A. TRUMPY found great difficulty in keeping the patient dry after the tubes had been removed. The wound usually became dirty and calcareous deposits frequently occurred around the internal meatus and the prostatic pouch.

DR. V. MCDOWALL after congratulating Dr. Roe on his paper stated that it was not difficult to find shadows in the prostatic area with the X rays but it was very difficult indeed to decide what they were. The passage of metal catheters and the taking of stereoscopic views did not often help. Filling the bladder with an opaque material was useless as it obliterated everything.

DR. A. S. ROE in returning thanks stated that he had seen one hundred prostatic patients and had operated on fifty with a mortality of three. In his experience frequency of micturition was a more usual complaint than obstruction. He had never done a punch operation. In this there must be no lateral lobe formation and all his patients had had it. Small seed calculi could not be diagnosed. They caused no symptoms and were of no significance. Calculi of the simple type occurred in young men and were apt to project into the urethra. Personal attention was very necessary in the after treatment. Suction was too difficult and the Hamilton Irving apparatus was not tolerated in public hospital patients, though it worked well in other patients. He cut the drainage tube short and applied copious dressings. He often found it necessary to pass a sound if normal micturition did not occur in two to three weeks. Cystoscopy revealed a ledge of mucous membrane which frequently was definitely œdematous. If the urine was alkaline phosphatic deposits were common. Ureters varied greatly, some were not seen and others were dilated. He strongly disagreed with Dr. Meyers regarding the importance of the acidity of the urine. The use of alkalis would improve the temperature, increase the amount of urine passed and by improving the results obtained from urea concentration test make the patient more suitable for operation. He found difficulty in dealing with the intellectual man who complained of frequency of pain in the back associated with very slight prostatic enlargement. The removal of other septic foci often improved matters, but it was difficult to decide whether to operate or not.

MEDICO-POLITICAL.

A MEETING OF THE QUEENSLAND BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held at the B.M.A. Building, Adelaide Street, Brisbane, on June 5, 1925, DR. VAL MCDOWALL, the President, in the chair.

The Federal Committee of the British Medical Association in Australia.

DR. J. LOCKHART GIBSON proposed and DR. D. A. CAMERON seconded a proposal for the amendment of Clause IV. (i.) of the Constitution of the Federal Committee of the British Medical Association in Australia that the word "May" be substituted for the word "February" so that the clause might read:

> It shall meet at such times and places as it shall determine . . . . provided that at least one meeting shall be held in the year not later than the last day of May.

The motion was carried unanimously.

A CONFERENCE was held of representatives of the Organization Committee of the Victorian Branch of the British Medical Association and of representatives of the Friendly Societies' Association on June 25, 1925, in the new B.M.A. Building, Brunswick and Albert Streets, Melbourne, DR. J. NEWMAN MORRIS, the Chairman of Committees, in the chair.

Friendly Society Lodge Practice.

DR. MORRIS read a letter from the Honorary Secretary of the Friendly Societies' Association in which three complaints were contained. The first complaint was to the effect that the only two medical officers of friendly society lodges in Rochester had refused to add additional names of lodge members to their lists.

THE HONORARY SECRETARY of the Friendly Societies' Association stated that the two medical practitioners at

Rochester had informed the secretaries of the lodges concerned that they had as many members as they could look after. The matter had been discussed with these doctors, but no satisfactory agreement had been reached. The friendly society work in Rochester had come to a standstill. It was pointed out that the same action had been followed in other localities and that if the practice became general, the progress of the societies would be affected. The friendly societies' representatives objected to the dictatorial attitude of the medical officers and claimed that while the terms of the agreement were not being disobeyed, the spirit of the agreement was being abused.

Dr. F. L. Davis, the Honorary Secretary of the Victorian Branch of the British Medical Association, stated that the Council had promised to induce the members of the Branch to carry out the terms of the award. The Council had approved of the terms of the agreement. It was a matter for the individual practitioner to determine whether his list was full or not. The Council of the Branch could not compel a member to take further names on his list if he stated that his list was full. In reply to a question, Dr. Davis stated that the Council would not object if a third man went to Rochester and accepted an appointment as a friendly society lodge surgeon unless the lodges removed all the names from the lists of the other two practitioners. If a third doctor went to Rochester, he might eventually have all the members on his list. Provided that no coercion was exercised, no trouble would be caused. The two medical practitioners in Rochester had been informed that they were acting within their rights, but that the Branch Council could offer no objection to the appointment of a third medical officer.

The Honorary Secretary of the Friendly Societies' Association stated that he had no information concerning the reason why the doctors had closed their lists. He laid great stress on the serious effect that this movement would have on the work of the friendly societies if it were to spread.

Dr. D. Rosenberg suggested that the reason for this action was economic. It was possible that the medical officers were finding that they were not making a sufficient income. Practitioners undertaking contract practice in Victoria were receiving the lowest rate in the British Empire. He suggested that the friendly societies should agree to an increase of the capitation fee. This would make medical practitioners anxious to take friendly societies lodge work.

It was suggested that the names of affluent members who had belonged to the society from their youth, might be removed. The friendly society representatives, however, pointed out that they were under contract to supply these members with medical attendance and under the agreement with the Victorian Branch it was provided that existing members should be entitled to medical benefit.

A further suggestion was made that a member of the Victorian Branch of the British Medical Association should visit Rochester at the expense of the Friendly Societies' Association to endeavour to settle the matter.

Dr. Newman Morris pointed out that it was impossible for a medical man in the country to inquire into the personal affairs of a prospective lodge member. It was easy for the lodge secretary to ascertain whether the prospective lodge member was eligible for medical benefit before being sent to the medical officer for examination. Medical officers of friendly society lodges were not being protected by the lodge secretaries. That was the reason why the medical practitioners at Rochester had taken this course of action. They had recognized the smallness of the remuneration. There was maltreatment by the lodge secretary who was not adhering to the spirit of the agreement.

The members of the Branch and the members of the Friendly Societies' Association undertook to communicate again with the medical practitioners and lodge secretaries respectively at Rochester.

The second complaint had reference to the refusal of medical officers of lodges to accept members on account of the alleged financial position of the parents of the prospective member. It was stated that this refusal had occurred in regard to candidates for membership of the Australian Natives' Association at Hopetoun, Warracknabeal and Horsham. The arguments used by the members of the Victorian Branch were that as a father was legally liable for the medical treatment of his son, it was unjust for a wealthy father to evade his liability by placing his son in a lodge; that it was contrary to the spirit of the agreement for the dependants of wealthy persons to claim medical benefit. The argument of the other side was that the lodge medical officers had their protection under the Wassley Award and that there was a board of arbitrators to inquire into a prospective member's financial position.

The third matter for discussion concerned the refusal of a medical officer to place a "clearance" member on his list. The instance was as follows: A bank clerk had been transferred from Hamilton to Mynyip. The medical officer of the lodge at the latter place had refused to take him on his list. It was agreed that an investigation should be made. A discussion took place in regard to the right of medical officers to refuse transferred members. The delegates of the Victorian Branch recognized that a man travelling from one town to another should not be deprived of the privileges of lodge membership.

At a meeting of the Council of the Victorian Branch of the British Medical Association held on July 22, 1925, the following motion forwarded by the Ethical Committee was adopted:

> That the following be added to Rule 14 of the Principles of Medical Ethics:
>
> > This prohibition shall not apply in respect of work done in the capacity of honorary medical officer to a special department at the Homœopathic Hospital.

The attention of members is also directed to a resolution of the Council of the Victorian Branch bearing on the same subject, which was published in The Medical Journal of Australia, June 13, 1925, page 634.

NOMINATIONS AND ELECTIONS.

The undermentioned has been nominated for election as a member of the New South Wales Branch of the British Medical Association:

Wooster, Gordon Bruce Roy, M.B., Ch.M., 1924 (Univ. Sydney), Mental Hospital, Gladesville.

University Intelligence.

UNIVERSITY OF MELBOURNE.

Director of Obstetrical Research.

The Council of the University of Melbourne has issued the following conditions of appointment of the Edward Wilson (*The Argus*) Trust Director of Obstetrical Research.

Duties.

1. The Director will be required to devote the whole of his time to the work of this appointment.

2. He will be required to direct the work of any assistants provided.

3. He will be required to make a survey of obstetric work in Victoria and to carry out investigations with the object of ascertaining the causes of maternal mortality and morbidity in the State of Victoria and to suggest methods for prevention and treatment.

4. The investigations should include:

   (*a*) An examination of the methods of teaching obstetrics to medical students and the training of nurses for obstetric work;

(*b*) The conditions of obstetric practice in hospitals, both public and private;

(*c*) The conditions of obstetric practice (domiciliary) in urban and country districts;

(*d*) The conditions of post-graduate study in antenatal work and obstetric practice.

5. For the purposes of the investigation it may be necessary for the Director to visit other States and countries to collect information and study methods.

6. He will be expected to collaborate with other bodies or institutions engaged in research work.

7. He will be expected to cooperate with the Obstetrical Research Committee appointed by the Faculty of Medicine and to report to it from time to time and at any time on request.

Tenure.

8. The Director will be appointed for a period of two years subject to an agreement to be drawn up which will provide for the termination of the appointment in the event of the Obstetrical Research Committee's reporting that it is not satisfied with the work which is being accomplished.

Emoluments.

9. The salary will be at the rate of £2,500 *per annum*.

Information.

10. The Director will be provided with necessary assistants.

11. All necessary expenses in connexion with the work will be paid subject to the authority of the Obstetrical Research Committee having previously been obtained.

12. Candidates must be legally qualified medical practitioners and should show evidence of an extensive experience of obstetric practice, including an honorary appointment on the teaching staff of an obstetric hospital or the obstetrical department of a general hospital and have experience of clinical work in this subject.

13. Candidates should state in their applications the date on which they would be able to take up duty.

14. Applications accompanied by not more than six testimonials and by evidence of physical fitness should be lodged with the Registrar on or before August 25, 1925.

15. The Obstetrical Research Committee consists at present of the following persons: Sir George Syme, Professor Berry (Chairman), Professor MacCallum, Dr. R. H. Morrison, Dr. Cairns Lloyd, Dr. J. W. Dunbar Hooper (Honorary Secretary), Dr. Felix Meyer (Honorary Treasurer), Dr. R. H. Fetherston, Dr. C. H. Kellaway, Dr. S. S. Argyle.

Correspondence.

DIABETES MELLITUS AND RAW PANCREAS.

SIR: I should like to report the results of two cases of *diabetes mellitus* recently treated by the oral administration of fresh, raw pancreas.

The first, Mrs. P., aged sixty-two, suffered from *diabetes mellitus* for thirteen years and dietetic measures on several occasions failed to render her sugar free. On June 7, 1925, one inch of Fehling's in the standard test tube was reduced by one drop of urine and the diacetic acid test was positive. She was then placed on low diabetic diet and on June 17 there was little change in the amount of sugar present. On that date she commenced taking once daily, a tablespoon of minced pancreas obtained from an animal killed not more than one and a half hour previously, without any alteration in her diet. Within twenty-four hours the urine was sugar free and acetone free and though she now takes the gland on alternate days only, I have been able to increase her diet rapidly without any return of glycosuria. The second case, Mr. G., aged twenty-nine, has suffered for four years and has only been sugar free when on "Insulin" treatment. On June 20 three drops of urine reduced one inch of Fehling's and no acetone was present. He was then on diabetic diet. On that date he took pancreas as above. On the following day he was sugar free and has remained so up to the present in spite of increased diet. These results, especially the latter, are very gratifying and are obtainable according to English writers only when very fresh pancreas is used. Any comment from those who have tried the treatment, would be much appreciated.

Yours, etc.,

HAROLD W. HORN, M.B., Ch.M.

Paddington, Brisbane,
June 29, 1925.

THE ORGANIC FACTOR IN MENTAL DISEASE.

SIR: In the bleak Sahara of what today passes as psychology, with its false standards, Œdipus follies and quack therapy, Dr. Clifford Henry's plea for the study of the organic factor in mental disease comes as a refreshing oasis. Whilst I do not share his admiration for Freud who, I consider, has done more to hide the truth than any other man living, Jung possibly excepted, I entirely agree with his general and wise acceptation of physiological and neurological doctrine. It is indeed gratifying to learn that, however unwillingly, modern psychologists have been forced to accept the biological basis of mind. But why unwillingly? No student of embryology, comparative anatomy, physiology, neurology or indeed any other "ology," except psychology, could come to any other conclusion. The absolute dependability of mind upon neurons stares us in the face at every turn. Why disguise the truth in a mass of meaningless verbiage? The "unwillingness" can, therefore, only arise from ignorance and ignorance of cerebral cortical histology, that is, of brain structure and its logical consequence, function or mind, is both real and lamentable. No modern day student—and in these matters we are all students—can study the works of Herrick and Ranson in America on modern neurology, of Tilney and Riley on the comparative anatomy of the nervous system, of Sherrington and his school on nerve impulse and integration, of Cajal on the neuron and its significance, of the striking work of Shaw Bolton, G. A. Watson and Mott on the lamination of the cerebral cortex and its meaning in health and disease without realizing the futility of attempting to discuss the phenomena of mind without a first hand knowledge of structure and function. The broad path leadeth to destruction and it is easier to talk at large about concepts, repressions and the like than to master the intricacies of the neuronic construction of the brain.

That much modern insanity is due to an imperfect development of cortical neurons and not to disease at all, is as certain as it is generally unrecognized. Flechsig's studies in the periods of myelination alone strongly suggest this, as does also Donaldson's much earlier work on the causes of brain growth. The ament, by whom I mean, as does Shaw Bolton, all subnormal people, not merely idiots and imbeciles, is one in whom from birth there is a lack of a normal number of neurons or an excess of embryological neuroblasts over neurons. Even under these developmental conditions of error, given a simpler environment, the higher grade ament may carry on fairly successfully in his own walk of life, but subject him to any excessive or abnormal strain—and life is full of such—and he breaks down with a "neurosis." His nervous system is not neuronically sufficiently resistant. "Lack of durability of neurons" may thus denote a developmental insufficiency of numbers, a faulty Nissl construction or a toxæmic chromatolysis. In any case the stress thrown on such a faultily constructed nervous system may result in an abnormal reaction to the environment, that is, lunacy in some form and the point is that such lunacy will occur earlier in these individuals than in the more normally constructed neuronic person. Shell shock was undoubtedly commoner in the higher grade ament of the

war than in the normal and the intelligent, because the former was born with an insufficiency of neurons and was thus incapable of resisting a strain to which no nervous system was ever designed.

During the last few years it has been my special privilege owing to the kindness of my colleagues on the staff of the local Children's Hospital to see a large number of aments among children. This clinical experience has satisfied me about certain things. One, that the dependability of mind upon neurons is indisputable. Two, that many children do not possess a sufficiency of such neurons and are thus early prospective inmates of our mental hospitals. Three, that such cortical amentia can be diagnosed during life with a high degree of accuracy, provided the right means be adopted. Four, that *post mortem* cortical histology confirms the diagnosis and the underlying principle and, lastly, that early diagnosis is better for patient, parent and public.

These studies, checked by such facilities as have equally kindly been extended to me at the Children's Welfare Department and the Receiving House, have further led me to believe that the neuroses, psycho-neuroses and hysterias, occur much more frequently and much earlier in life in the under-developed high grade ament, that is, the under-neuroned individual, than in the normal and I am convinced that when our alienists really turn their attention to the convincing work of Shaw Bolton and Watson rather than to those of Jung, Freud and company they will be as convinced as I am, that for some years past we have been worshipping false gods and there is no truth in them.

It is not to be assumed that in laying stress on the rather insufficiently recognized developmental and histological side of the lunacies that I am ignorant of those induced by other factors. But the neuron is really the one important item and it is very small and very elusive, but it well repays study. What is senile dementia but a destruction, partial or complete, of previously active neurons and who is there amongst us who, if he lives long enough, will not suffer from such destruction or dementia? And what is *dementia præcox* but an earlier type of such destruction occurring most probably in a high grade ament?

I trust that Dr. Clifford Henry will not for one moment imagine that these few fragmentary remarks are dictated by any other sentiment than one of admiration for one who is apparently seeking the truth where only the truth can be found, that is, in the neuron.

Yours, etc.,

RICHARD J. A. BERRY.

University of Melbourne.
July 1, 1925.

MYXŒDEMA.

SIR: Dr. de Crespigny asked during the interesting discussion on myxœdema in Adelaide whether any grafting of thyreoids had been done in the early days.

In the Transactions of the Third Australasian Medical Congress, Sydney (1892), he will find a paper by me on "The Functions of the Thyroid Gland with Observations on a Case of Thyroid Grafting." This paper was illustrated by seven photographs and was also published, together with the photographs, in *The British Medical Journal* of January, 1893. The case was the first recorded of the grafting of thyreoid gland into the abdominal cavity of a human being. Unfortunately the graft was not a human one, but from a young sheep and ceased to supply thyreoid secretion after six or eight months. Then thyreoid feeding was resorted to.

I have often urged my colleagues here to obtain human thyreoid and graft it into the abdominal cavity in cases of children suffering from cretinism. Surely, if successful, a better treatment than life long feeding with thyreoid tablets! Some cases of hyperthyreoidism would surely furnish sufficiently healthy glandular substance.

My case was as the photographs clearly indicate, a very extreme case of myxœdema in a child. It was a sporadic cretin with myxœdema very pronounced. Possibly there was some functionating thyreoid at birth (1885), but very little at two years of age and none at six years of age when I grafted (1891).

The case is referred to as a remarkable one by Stephen Paget in his "Life of Victor Horsley."

Schiff was the first to demonstrate that if a dog's thyreoid is placed in the abdomen of another dog and the thyreoid of that dog afterwards excised the symptoms following excision of the thyreoid do not appear. Early in 1885 I endeavoured to obtain evidence in support of Schiff's findings. My paper on "The Blood Forming Organs and Blood Formation: An Experimental Research," published in the *Journal of Anatomy and Physiology* (1885 and 1886), contains the following unwieldy sentence:

> On the 21st February, 1885, fourteen days after the removal of the second lobe (of the thyroid gland) having made a solution of fresh thyroid gland in a mixture of neutral salt, with the intention of now and then injecting a little into a vein of the animal to see whether any evidence could be got in support of Schiff's idea that when the substance of the thyroid is absorbed into the blood the animal is preserved in life, I was just preparing to make the first injection when the dog died (on the table) in a strong convulsion.

The dog in question was the last I had been able to subject to excision of the thyreoid.

A deficiency, sometimes slight, of thyreoid secretion is answerable, I believe, for more trouble than we even yet attribute to it. The following two cases have suggested this to me.

In March, 1918, I operated on a woman, aged fifty-two, for acute double glaucoma. The result in each case was excellent and so far permanent. A year afterwards I noticed when she visited me an œdematous state of her lower lids and a very little of her face. Small doses of thyreoid gland, half of a grain once or twice daily of standardized thyreoid, got rid of the puffiness, but the lids become puffy again if the thyreoid is discontinued. Larger doses disagree. Had defective functioning of her thyreoid been a factor in causing her glaucoma?

Another case was that of a woman, aged sixty-two years. I removed a cataract uneventfully in 1922. Seven weeks afterwards the iris began to bleed into the anterior chamber and continued to do so for weeks. This threatened to destroy an otherwise good result. The usual treatment failed to influence the hæmorrhage. "Hæmostatic Serum" was, however, only used once.

I put her on one grain tablets of standardized thyreoid thrice daily. The bleeding appeared to stop as a result of this. They had to be continued for several weeks as discontinuance was followed by recurrence. Resulting vision was excellent. Afterwards I noticed that there was distinct, slight puffiness of the face and lids. To keep in good health she has required for the last two and a half years to take a one grain tablet of thyreoid daily.

Occasionally patients with more evident though slight signs of myxœdema consult me about their eyes. When I suggest to their medical advisers that thyreoid medication is necessary, they are sometimes sceptical, but the result of treatment has clinched the point. The danger of thyreoid medication appears to be harm from over dosing.

Yours, etc.,

J. LOCKHART GIBSON, M.D. (Edin.).

Wickham Terrace, Brisbane,
July 14, 1925.

A CORRECTION.

SIR: I greatly regret that I omitted to include the name of Dr. FELIX MEYER (the Honorary Treasurer of the Committee appointed to manage the Obstetrical Research, *Argus*, Fund) among the names mentioned in my inaugural lecture at the recent obstetrical post-graduate session.

The mistake and omission is entirely due to my hurriedly written and typed script of the said lecture and I desire to apologize to Dr. Felix Meyer for my carelessness.

I apologize also to you, sir, for the trouble I am giving in asking you to make good that omission.

Yours, etc.,

J. W. DUNBAR HOOPER.

12, Collins Street, Melbourne.
July 28, 1925.

Proceedings of the Australian Medical Boards.

QUEENSLAND.

THE undermentioned have been registered, under the provisions of *The Medical Act* of 1867 as duly qualified medical practitioners:

Boddington, Charles Blair, M.B., Ch.M., 1925 (Univ. Sydney), Clayfield, Brisbane.

Geoffroy, Alfred John, M.B., Ch.M., 1924 (Univ. Sydney), Townsville.

Lahz, Rudolph Sergius, M.B., Ch.M., 1924 (Univ. Sydney), Marburg.

Robinson, Samuel, L.M.S.S.A., 1918 (London), Brisbane.

Bonney, Henry Claude, M.B., Ch.B., 1925 (Univ. Aberdeen), Lewis Street, South Brisbane.

Additional Qualification.

McKillop, Lachlan Martin, F.R.C.S., 1924 (Edinburgh).

Books Received.

MEDICAL OPHTHALMOLOGY, by R. Foster Moore, O.B.E., M.A., B.Ch. (Cantab.), F.R.C.S.; Second Edition; 1925. London: J. and A. Churchill. Demy 8vo., pp. 344, with illustrations. Price: 18s. net.

THE STOMACH AND UPPER ALIMENTARY CANAL IN HEALTH AND DISEASE, by T. Izod Bennett, M.D. (London), M.R.C.P.; 1925. London: William Heinemann (Medical Books) Limited. Demy 8vo., pp. 359. Price: 21s. net.

Medical Appointments.

Dr. E. W. Kyle (B.M.A.) has been appointed Resident Medical Officer, Government Hospital, Kalgoorlie, Western Australia.

* * * *

Dr. H. H. Schlink (B.M.A.) has been appointed a Government Representative on the Board of Directors of the Royal Prince Alfred Hospital, Sydney.

* * * * *

Dr. E. J. Harbison (B.M.A.) has been appointed Officer of Health to the Local Board of Health, Terowie, South Australia.

* * * *

Dr. E. J. Howley (B.M.A.) has been appointed a Justice of the Peace for the State of South Australia.

Medical Appointments Vacant, etc.

FOR announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xviii.

DEPARTMENT OF PUBLIC INSTRUCTION, VICTORIA: Dental Officer.

LEONORA DISTRICT HOSPITAL, WESTERN AUSTRALIA: Resident Medical Officer.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30 - 34, Elizabeth Street, Sydney.	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester United Oddfellow's Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries Australian Prudential Association Proprietary, Limited. Mutual National Provident Club. National Provident Association.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIAN: Honorary Secretary, 12, North Terrace, Adelaide.	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

AUG. 11.—Tasmanian Branch, B.M.A.: Branch.
AUG. 11.—New South Wales Branch, B.M.A.: Ethics Committee.
AUG. 13.—Victorian Branch, B.M.A.: Council.
AUG. 13.—South Australian Branch, B.M.A.: Council.
AUG. 13.—New South Wales Branch, B.M.A.: Clinical Meeting.
AUG. 14.—Western Australian Branch, B.M.A.: Council.
AUG. 14.—Queensland Branch, B.M.A.: Council.
AUG. 18.—Tasmanian Branch, B.M.A.: Council.
AUG. 18.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
AUG. 18.—Illawarra Suburbs Medical Association, New South Wales.
AUG. 19.—Western Australian Branch, B.M.A.: Branch.
AUG. 25.—New South Wales Branch, B.M.A.: Medical Politics Committee: Organization and Science Committee.
AUG. 27.—New South Wales Branch, B.M.A.: Branch.
AUG. 27.—South Australian Branch, B.M.A.: Branch.
AUG. 28.—Queensland Branch, B.M.A.: Council.
AUG. 31.—Victorian Branch, B.M.A.: Council.
SEP. 1.—Tasmanian Branch, B.M.A.: Council.
SEP. 2.—Victorian Branch, B.M.A.: Branch.
SEP. 2.—Section of Obstetrics and Gynæcology, New South Wales.

Editorial Notices.

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